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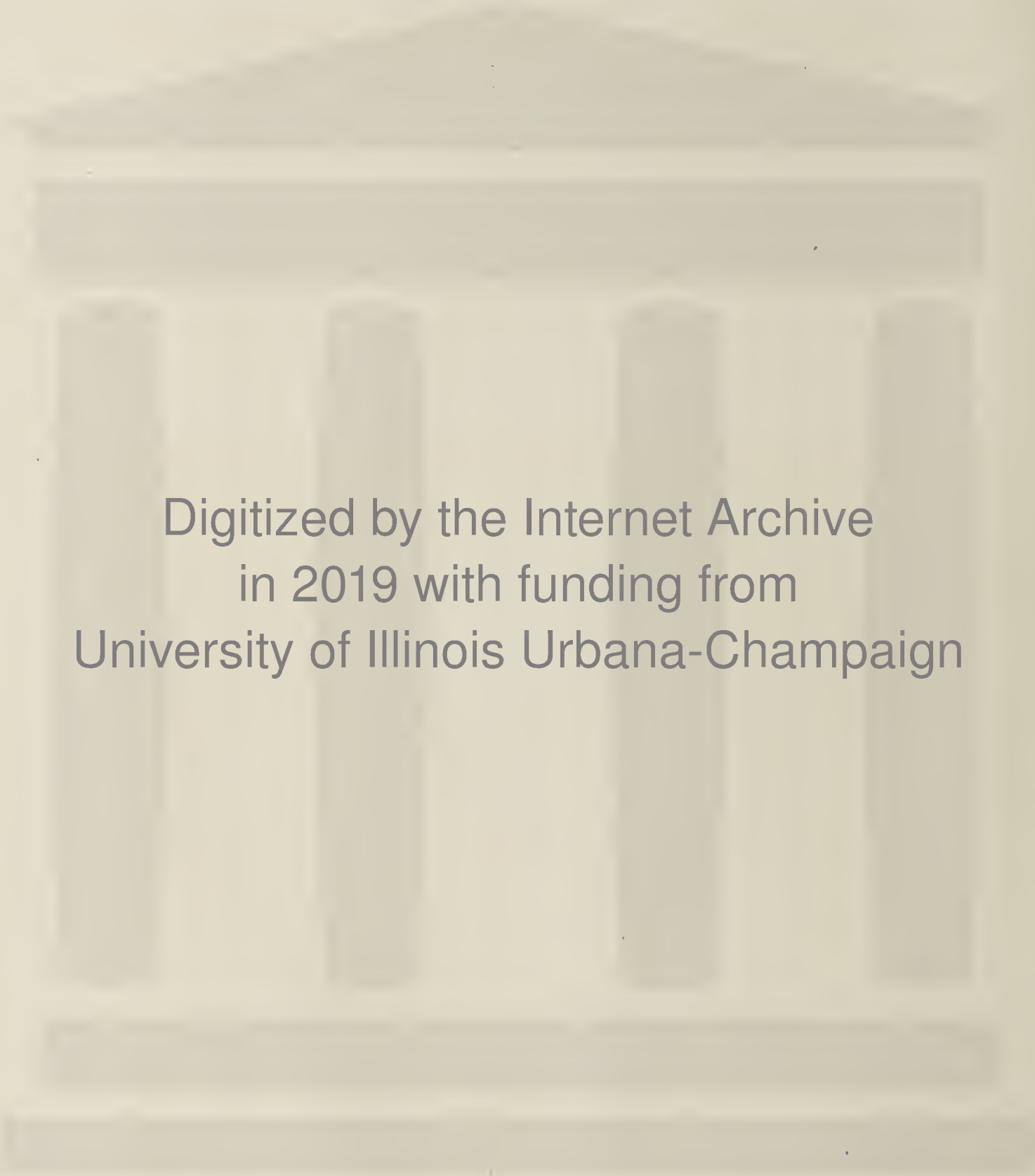












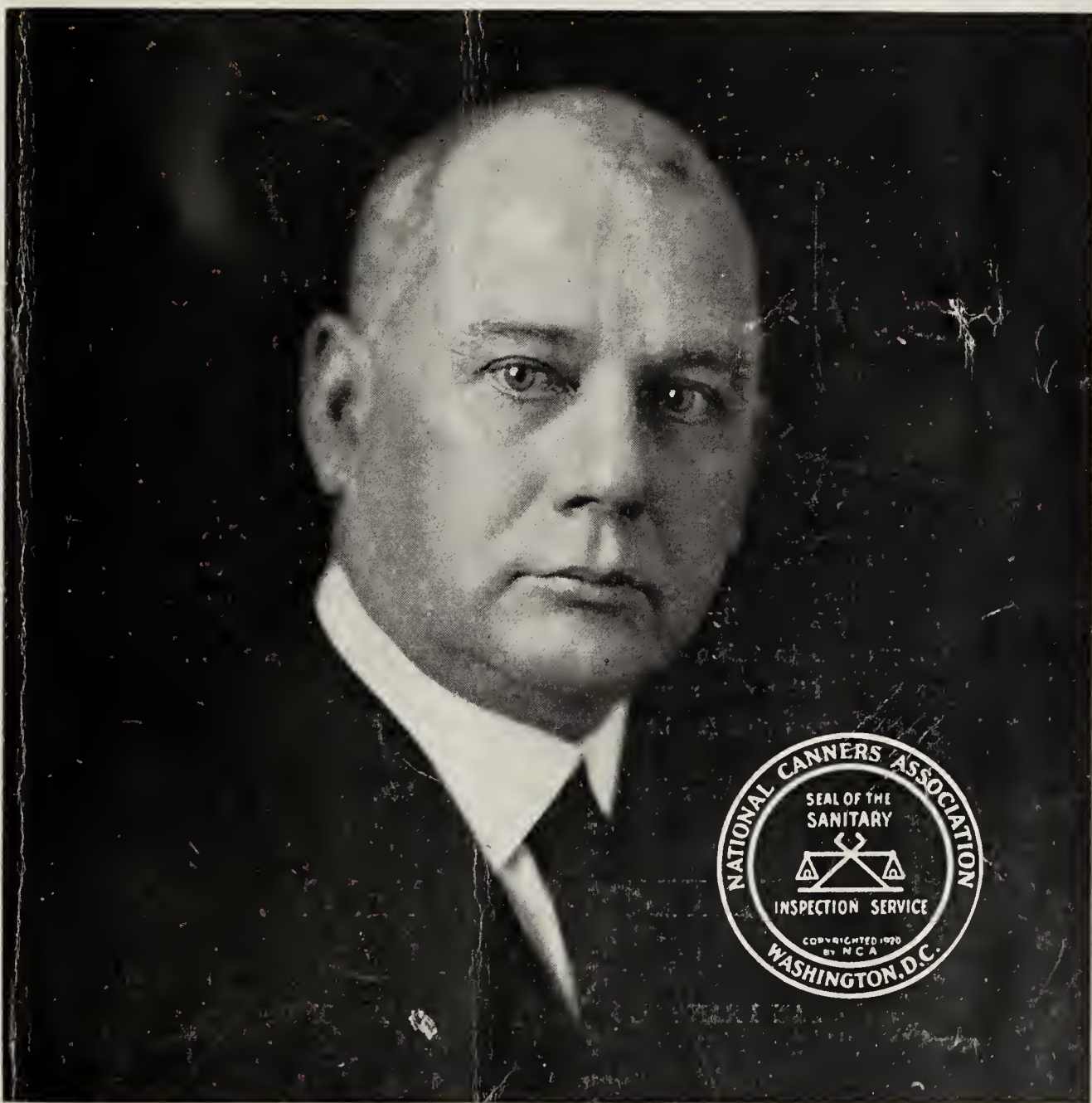
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# The American Food Journal

The National Magazine of the Food Trades



The New President of the National Canners Association, HARRY P. STRASBAUGH of Aberdeen, Maryland, and the Inspection Seal of the Association, the Mark of the Sanitary Food Product.





## Thousands Suffer From Lack of One Vital Element in their Food

### A CERTAIN Mysterious element called VITAMINE!

Science has established that our store of energy, and even health itself, depends upon it. Without it, no matter how much food we eat, we are slowly starving the vital tissues upon which we must rely for our strength.

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The richest source of this life-giving vitamine, it has been discovered, is—Y-E-A-S-T!

### FLEISCHMANN'S YEAST

—the same yeast that you have been familiar with for years for baking bread, has a unique value for every man and woman.

Already thousands are eating FLEISCHMANN'S YEAST as an addition to their every day diet. It stimulates the appetite, helps digestion, and gradually takes the place of laxatives.

Eat from one to three cakes a day before or between meals.

Place a standing order with your grocer.

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“The New Importance of Yeast in Diet”

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ESTABLISHED 1851

New York

Chicago

*The New York Journal of Commerce*

## ASK UNIFORMITY IN FOOD CONTROL LAWS

WHOLESALE GROCERS STRIVING TO THAT END.

Careful Watch to Maintain Good Record Will Be Necessary, With Forty-two State Legislatures in Session This Year.

By FRED R. DRAKE,  
Chairman Pure Food and Legislative  
Committee, National Wholesale  
Grocers' Association.

WE have purposely taken the heading used by the "American Food Journal" in its November issue as the subject of our article, as we desire to impress upon all members of the food trade the great importance of this subject in which the National Wholesale Grocers' Association has taken so much interest since its organization in 1906.

We urged the passage of the Federal Food and Drug act of June 30, 1906, and have constantly done our very best to aid the Government in enforcing its provisions and to create a sentiment among the States looking to making their laws uniform with the Federal law.

While there are some creases to be ironed out, still the food laws in the United States are very much better than the legislation along pur-

ment of the Federal law.

much better than

*Quotes The American Food Journal*

## A Constructive Programme

It is gratifying to find that we are all of us working together, to the same constructive ends.

Fred R. Drake, representing the powerful National Wholesale Grocers' Association through its Pure Food and Legislative Committee, pays the American Food Journal a subtle compliment by quoting us in his Journal of Commerce article which we reproduce on this page. And we are glad to return the compliment.

Work of this kind must go on—and the more of us who put our shoulders to the wheel, the better.

In all modesty, we believe that the constructive editorial support and, if you will, leadership, of a broad-gauge magazine of the food trades is an essential requirement in such work.

It is this sort of leadership, this sort of constructive influence, not only in the matter of uniformity in food control laws, but in all movements for the general good of the food trade, for which we hope to make the new American Food Journal, with your help, stand.

*The Publishers*

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January 24, 1921



# The American Food Journal

The National Magazine of the Food Trades

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J. T. Emery, President

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## The Editor's Column

In this issue THE AMERICAN FOOD JOURNAL presents not only a report of the more important developments at the annual convention of the National Canners Association, but also reproduces some of the interesting papers which were read. Others are reserved for publication in the following issue.

One of the valuable papers was that read by Prof. E. O. Jordan of the University of Chicago on "Sanitation." Prof. Jordan, who is a noted bacteriologist, is the author of "Food Poisoning" and other bacteriological works. He is chief of the serum division of the Memorial Institute for Infectious Diseases, Chicago. About a year ago he was appointed a member of the International Health Board of the Rockefeller Foundation.

On the subject of merchandising of food products, the paper read by Russell B. Kingman of Orange, N. J., on "The Psychology of Consumer Preference" contains many practical suggestions to food manufacturers and distributors. Mr. Kingman has had a wide experience as a sales executive in the food trade, and the ideas he expresses are of interest and value.

Dr. Harvey W. Wiley expressed the thought in his address to the Canners convention that the two great sciences of handling food—the physics and chemistry of the process on the one hand and the economical conditions on the other, must join hands in order that a satisfactory daily food may be given to the nations of the world. This bringing together of the best thought regarding these two sciences is the underlying purpose of the editorial program of THE AMERICAN FOOD JOURNAL. In each issue we shall publish the best obtainable articles pertaining to both scientific and economic phases of food production.

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reclaims wholesome  
skimmed milk for human  
food.*

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“**HEBE**—Its Dietetic and Economic Value” and “Today’s Food Problem” are booklets of especial interest to food officials, dietitians and economists. They will gladly be sent upon request. Address 3209 Consumers Bldg., Chicago.

**THE HEBE COMPANY**

Chicago

Seattle





# The American Food Journal

The National Magazine of the Food Trades

Vol. XVI

JANUARY, 1921

No. 1

## "New Era of Wholesome Food" Ushered In By Great Convention of Cannery

National Association in Meeting Dedicated to the Consumer Launches  
Inspection Seal Campaign

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THE "New Era of Wholesome Food", the title of the opening address delivered by President Walter J. Sears before the National Cannery Association at Atlantic City, N. J., on January 17 well expresses the theme which pervaded all of the deliberations of that organization in its great convention dedicated to the consumer.

"The canning industry has entered upon a new era," said President Sears. "This era really began in 1895 when the discoveries of science brought to the cannery a new sense of their responsibility in the preparation of human foods. The Federal food law of 1903 emphasized the need of freeing the industry of those who had brought shame on it. Scientific research, our own self-imposed investigations, and many others freely carried on in many institutions filled the years with the light of a better day. The World War called the industry to new acts of service and self-examination and at its close this association accepted the full meaning of the scientific truth that cleanliness is next to godliness; that is next to life and health. Thereupon the industry committed itself to the science of sanitation, imposing upon its plants and processes an inspection service which would insure wholesome food.

"The industry had long since accepted the findings of the science of bacteriology—that practically all food materials were subject to the attack of harmful bacteria. It had been slow, however, to adopt the sound measures of prevention and defense which the science of sanitation offered. But the years of study and investigation have brought their rich rewards of new commanding truths, higher ideals and nobler policies. At last the new era is here. For us and for the people it is to be known as the Era of Wholesome Food.

"This era is to be made secure; it is to grow into larger service only as it is vitalized by the understanding aid and sympathy of the American housekeeper. She has been and is to continue to be the supreme judge of the court which is to pass finally upon our supplies of human food. Her comfort and happiness, her rights and desires are more and more to deter-

mine the policies and practices of food producers. Therefore this convention has been dedicated to her. We welcome her to the deliberations of an industry whose struggle for better things and whose present program must appeal to her interest and intelligence."

### The Seal of Inspection

With this as a keynote, the convention proceeded to the discussion of important subjects in connection with the new Era of Wholesome Food, chief of which, from the viewpoint of the National Cannery Association, is its new Seal of Inspection, which soon will be placed on the bulk of the canned foods produced in the United States.

Much has already been written about the purpose of the Inspection Seal and the manner in which it will benefit not only the consumer but the producers and distributors of canned foods as well. Considerable interest, therefore, attached to the address of F. J. Ross, president F. J. Ross Company, New York, which will have charge of the publicity campaign by which the program of the Cannery Association will be set forth to the American housewife. In part Mr. Ross said:

"Considering the present size of your industry, the variety of its products, and the breadth of its market, the American housewife does not hear nearly enough about the excellence and convenience of canned foods. There has not been nearly enough advertising of canned foods individually or collectively.

"Considering the extent to which canned foods are held in distrust (which was also proven with great clarity) the industry has made little public effort to remove that distrust.

"For years and years the widest circulation has been given to false rumors of so-called ptomaine poisoning due to canned foods. These rumors have taken deep root in the public mind—so deep that it will take years to remove them.

"In this world every man must fight for himself, and every industry must fight for itself.

"The canning industry has now begun to fight for itself, and the Seal of Inspection is its trusty



weapon—the only weapon that will eventually kill the prejudice that harms us.

### The Present Stage of the Campaign

“The purpose of the present stage of the campaign is to sell the Seal of Inspection to women. Not until women in great numbers are using it as their guide to the canned foods they buy, will this stage be completed.

“When the great majority of canners are under inspection—

“When they are actually putting the seal on every can entitled to bear it—

“When the jobbing trade sees the light and seeks by preference canned foods that bear the seal—

“When the retailers insist that the jobbers supply them with inspected canned foods—

“When the Inspection Seal, that pivotal factor of your whole undertaking, has won its place with canner—broker—jobber—retailer and consumer, we will have success chained down.

“Therefore the lines of effort which this campaign must embrace become clear—

1—Constant advertising to the consumer in magazines and newspapers positively, and in other mediums if possible.

2—Constant missionary work with jobbers by N. C. A. field men, by brokers, by canners themselves and by advertising.

3—Constant missionary work with retailers by jobbers and their salesmen, by canners and their salesmen, by advertising, by growing consumer demand and, if possible, by organized crews of trained men. These crews will steadily cover town after town, and with the support of newspaper advertising running simultaneously will educate consumers and retailers to the

importance of the Inspection Seal. They will drive it home as an assurance of dependable canned food and as an instrument to a sounder canned food business.

### The Scope of the Campaign

“Everybody eats. Nearly 100,000,000 of us are old enough to eat canned foods. The possible scope of this campaign is to accelerate the canned food eating of the nation.

“The actual present scope of the campaign is automatically set by the funds available. That is in the jurisdiction of your finance committee.

“To reach the consumer—the jobber—the retailer and the canner in the manner I have previously indicated, calls for expenditure.

“It is hoped that the campaign in all its branches may be financed so that it will cover roundly one-half of the market. If a good job is done to that extent, the rest of the market will eventually fall in line.

### The Tangible Benefits to the Canner

“A larger consumption. How much larger, each canner can figure according to his own ideas. Take any single pack and figure it on a per capita basis. The largest of them—except milk—shows less than 4 cans per capita per year—and even milk, figured on a three times a day possibility, would not show up as well as this.

“Certainly the industry can be doubled. Let it go at that. There is a goal to work for and it can positively be reached in a few years if the necessary effort be made.

“Can the industry be stabilized? Most assuredly, for the cardinal factor in larger consumption will be found to be steadier consumption.”

## President Sears Makes Recommendations

An export finance corporation, a decrease of the present tax upon commercial and industrial resources of the nation, refunding America's war debt over a period of time, and legislation that will check and discourage speculation in food products on margins, were among the recommendations made in the annual report of Walter J. Sears, of Chillicothe, Ohio, president of the association.

In submitting his report, Mr. Sears said that the year just closed marked the first period in the era of readjustment following the world war, and that it was difficult to distinguish economic causes from economic effects, but he declared that it was his belief that the most urgent need was a revival of world-wide commercial intercourse—the restoration of national and international confidence, and the establishment of some international economic organization that will provide the basis for the international exchange of commodities.

Mr. Sears dwelt at great length on foreign trade, particularly the organizations of export corporations under the provisions of the Edge law to take care of the demand of European countries for raw and finished products. He said that the revival of the War Finance Corporation, if intelligently directed toward the same end, would undoubtedly bring immediate relief

to this nation, as well as to all other nations trading with America. He also declared that the promotion and development of such export organizations would have an immediately quickening effect upon the revival of confidence among the nations of the world and the reflex upon foreign exchange would be most helpful, since any improvement of exchange values would mean the entrance into our markets of European buyers who decline to enter as long as the present depression prevails.

### The German Indemnity

Continuing on the subject of foreign trade, Mr. Sears said:

“This international program must necessarily consider the final indemnity which Germany must pay to her late enemies and in this connection the sooner we are willing to admit, however, unpleasant the admission may be, that European economic solidarity cannot be achieved until Germany is rehabilitated, the better it will be for an early world-wide revival of trade. Therefore, the logic of the situation seems to be that as this country cannot expect the fullest measure of prosperity until Europe has reached a point of stability, so world-wide prosperity cannot be realized until Germany and the other



central powers, dependent upon her, have regained their former commercial strength."

The second most practical remedy at hand, Mr. Sears said, was the re-direction of the fiscal financing of America's national governments as well as that of all other nations which took part in the war. For our own government, he continued, we needed first the strictest economy in administration, a system of taxation that will be just and equitable and a policy of cancelling our war debt which will extend its burdens over the productive enterprises of the nation for the next fifty years. A third remedy, he said, would be the elimination of all speculation in essential products.

Reterring to the canning industry, the speaker said that this industry had felt the full effects of the economic depression, particularly when it faced rising cost of materials and labor, the curtailed sale of its products, due to the decision of many wholesale distributors to discontinue the custom of buying their season's requirements of canned foods upon future contracts, and the serious losses suffered by the wholesale trade in the purchase of sugar and other commodities later in the year. This situation, he said, emphasized three outstanding characteristics of the industry which must now have the careful consideration of the canners. They were:

First—A shortage of working capital among the factors in the industry.

Second—Its seasonal character.

Third—Its sectional character.

#### **Urges a Constructive Program**

In this connection, he urged the canners to adopt a constructive program which would embody the means for developing larger working capital; a more appreciative and responsive attitude on the part of those who control large resources of credit, and an understanding on the part of the consuming public of the canners' problems of production to the end that consumption may become quickened and continue during the season of non-production.

Mr. Sears in his report also gave a thumbnail sketch of the major activities of the association, laying particular stress upon the departments of Chemical and Bacteriological Laboratories, Bureau of Raw Products Research, Sanitary Inspection of Canneries, and Educational Research. Each one of these branches came in for praise for the work accomplished in the industry.

The subject of private trademarks was also discussed by the speaker. Despite the opposition from a limited class of wholesale grocers who distribute canned foods under private trade marks, he said this opposition was self-centered and based upon a fear that the inspection seal of the association, which identifies the approved foods, will create a demand on the part of the consumers which they themselves have not created and do not control.

"This opposition, however, cannot prevail against the rights of the consumer," Mr. Sears said. "These rights must be supreme as against any self-centered policy of the distributor. The consumer will endorse any feasible and practi-

cal plan whose purpose is to provide food under proper conditions." However, he said, the private trade mark is not in the interest of either the producer or consumer, but wholly in the interest of the distributor. He called attention to the agitation in some quarters to provide, by national legislation, that all labels covering canned foods shall bear the name and address of the canner or manufacturer. There is a bill now pending in Congress making provision of this kind, which has the support of the American Housewives League and other organizations representing the consumer, Mr. Sears pointed out in his report.

#### **Other Matters Discussed**

The appointment of a traffic committee to cooperate with similar organizations to take care of complaints of members of the industry when filed with the Interstate Commerce Commission, was also urged in Mr. Sears' report.

The report as submitted to the delegates, is divided into various groups, each group dealing comprehensively with the subject of grade and standard definitions of canned foods; uniform sales contract; shortage of supplies; cancellation of contracts and rejection of deliveries; spoilage; farmers organizations; tariff legislation, and the intrinsic value of canned foods.

On the subject of tariff legislation, Mr. Sears said that the industry should be heard before any law is finally enacted.

In conclusion, he predicted that the cost of producing canned foods in 1921 will not be radically reduced below 1920, because the average increase of food products since 1914 has risen to 114 per cent, and therefore the American people must be patient, until the readjustment of the economic conditions have been settled.

#### **The Secretary's Annual Report**

The fourteenth annual report of Frank E. Gorrell, of Washington, D. C., secretary of the association, was a brief resume of the most serious year the canning industry has yet encountered.

"It is needless to say that this condition has reflected itself in the association's work," Mr. Gorrell's report begins. "The responsibilities of the National Canners' Association have been greater and more varied than ever before, and it has been put to the real test of its efficiency. Whether or not it has successfully passed through this severe test the industry alone will decide.

"It is needless to say that the responsibilities assumed or, rather, thrust upon it have at times seemed almost unsolvable without the safeguard of precedents. The executive office, however, offers no apologies for its shortcomings, because there is a limitation to human ability, and the effort has been conscientiously performed.

"While this report is intended to carry the spirit of ultimate optimism there is no gainsaying the fact that the canning industry has not yet fully solved the present crisis. However, it will recover just as all other general business. There is in the mind of the consumer a feeling that prices will return to the pre-war average.



If this is brought about it will mean terrific loss that someone will have to pay.

"The wisest prophets feel that this country has gone through its worst and is on the road to recovery. The canning industry is a great and growing one and will become larger and larger as the product is more and more appreciated by the consumer. Today it occupies an important sphere in feeding the world and this sphere is an increasing one."

### Inspection Work Now Well Under Way

While this convention marked the formal launching of the Inspection Seal campaign in a big way, the work leading up to the campaign has been under way for about two years. Under the direction of H. M. Loomis, National Director of Inspection, the Inspection Service has operated during the past season in nineteen States, covering 29,000,000 cases packed in 825 canneries, and 281 inspectors, in addition to the directors themselves, have been necessary for the proper carrying out of the service. Daily inspections have been made throughout packing season of all plants under inspection, to maintain compliance with the sanitary regulations of the association and to enable the association to

assure to the consumer the purity, wholesomeness and integrity of the various inspected canned products.

### Several Excellent Addresses Delivered

In addition to a number of excellent addresses delivered before the convention by men prominent in various phases of food work, there were the usual reports of committees and other routine work. As usual the convention split up, after the opening session, into sectional meetings which dealt with matters of pertinent interest to each group. Among the prominent speakers, some of whose addresses are reproduced in this issue, were Dr. Carl L. Alsberg, chief of the Bureau of Chemistry; Dr. Harvey W. Wiley, Dr. M. J. Rosenau, Harvard Medical School, Boston; Dr. E. O. Jordan, bacteriologist, University of Chicago; Miss Mary Sweeny, president American Home Economics Association; Russell B. Kingman, who discussed "The Psychology of Consumer Preference;" Arjay Davies, president National Wholesale Grocers Association; H. A. N. Daily, president Canned Foods and Dried Fruit Brokers Association, and Ogden S. Sells, president Canning Machinery and Supplies Association.

## Important Resolutions Are Adopted

Resolutions proposing the formation of a canners' export corporation, protective tariff, recognition from the Federal Reserve banks in more extensive credits, revision of the Agricultural departments of the Government to afford more help to their industry, and planning assistance to stricken areas of Europe were passed.

The convention also went strongly on record for the repeal of the excess profit tax, the "revision of the Federal tax system in fashion as will lessen the present burden upon the commercial industrial resources of the nation," and finally "the refunding of our war debt so that its cancellation will cover a longer period of time."

With reference to immigration the convention declared:

"There is at the present time a sentiment in the minds of a certain part of the community that all immigration should be immediately prohibited, and while we recognize the necessity of a check being put on the influx of undesirables, nevertheless we cannot lose sight of the needs of the rural districts for an increased population of men and women adapted to life on the farms."

### Favor Suitable Immigrants

The resolution earnestly recommended to Congress that a suitable law be enacted to insure that the best type of men and women in foreign countries who wish to emigrate to the United States be encouraged to come to this country, and at the same time that this law provide for the rigid exclusion of all undesirables.

The canners further asserted: "Our interest in the farming communities warrants our recommending that careful and adequate provision be

made for the distribution of such immigrants to these localities where there is most need of them and in which they will make the most useful citizens."

On the question of credits the resolutions recited that "the canning industry, by reason of its seasonable character, has need of large credit accommodations in the normal production and marketing of its products," and that "in case the purchase of canned goods in 1921 by future contracts is greatly reduced the canners will need unusual credit accommodations if canned foods are to be produced and carried by the canners until they are needed by the consumers," and, further, "this economic essential is admirably stated by the Lever Food Act, when, in formulating the principles of food conservation it urged the development of surplus products in the season of natural maximum production to be carried over into the season of scant or no production; therefore, be it resolved, that the peculiar condition of the canning industry be fully presented to the Federal Reserve banks in extending to the canning industry the full measure of credit to which it is entitled."

### Will Go Before Congress

The foreign trade committee was "empowered to represent the industry before the committees of Congress which are to consider the revision of our tariff laws, and that a serious effort be made to provide the capital necessary for the canners' export corporation when the time is opportune."

Pointing out that the industry has an annual output of approximately \$800,000,000 and employs a quarter of a million people, the conven-



tion urged upon the Ways and Means Committee of Congress to "give due consideration to the depressed condition of the industry and the needs of its various branches. Under the present low import duties canned foods are coming into this country in increasing quantities from countries where their industries operate upon a lower scale of wages not compatible with the standards of living enjoyed in this country."

The resolution "earnestly recommended a duty be placed upon all imported food sufficient to offset the difference in the cost of production. This recommendation is made not merely as a means of protection to the industry and as a source of revenue to the Government but as a means for the negotiation of reasonable tariffs in most foreign countries which now levy prohibitive tariffs upon the products of our industry."

The convention named a committee on canneries construction to study the modern standards for buildings and to report back at the next convention with both written and photographic

data. Congressional committee in charge were urged along with the legislative bodies of the several States to give increased attention to the necessity of more adequate appropriations for the support of the agricultural research agencies in their several jurisdictions."

### Margins Resolution Lost

A resolution approving legislation to "check and discourage speculation in food products on margins" was defeated after lengthy discussion. The chief objection offered to the resolution was that the canners were not sufficiently informed to draw a line between necessary market transactions and those serving no desirable end.

After voting down a recommendation to make the metric system the official system of the country, the question was ordered stricken from the records in order that the association's action might not be construed as hostile to the change. It had been objected that other industries would sustain a tremendous loss by change of system, while the canners had little at stake.

## Harry P. Strasbaugh Elected President

The following officers were elected for the coming year:

President—Harry P. Strasbaugh, Aberdeen, Md.

First Vice-President—James Moore, Rochester, New York.

Second Vice-President—(Referred to Directors).

Secretary and Treasurer—Frank E. Gorrell, Washington, D. C.

The following new directors were elected:

Maine—Dr. W. E. Elwell, Portland.

Hawaii—Albert Horner, Honolulu.

Louisiana—Dr. L. H. Jastremski, Houma.

New York—James Moore, Rochester.

Illinois—G. A. Eastwood, Chicago.

Utah—Richard Stringham, Woods Cross.

Illinois—Ralph Polk, Mound City.

Maryland—John M. Swing, Ridgely.

Virginia—B. F. Moomaw, Roanoke.

Illinois—E. F. Trego, Hoopeston.

California—Bismark Houssels, San Francisco.

Oregon—Fred Kendall, Portland.

New Jersey—Luscious E. Hires, Salem.

New Jersey—Russell B. Kingman, Orange.

Harry P. Strasbaugh of Aberdeen, Md., the newly elected president, has been identified with the canning industry since 1890. For about fifteen years he was president and financial manager of the Wright Canning Company, Townsend, Del. For a number of years he has owned and operated corn plants at Mount Pleasant, Del., and Aberdeen, Md. For three years he was the assistant district manager of the American Can Company in the Atlantic district. He has served as president of the Tri-State Packers Association.

Mr. Strasbaugh's latest photograph is reproduced on the front cover of this issue.

## President of Wholesalers Discusses Contracts

Arjay Davies, president National Wholesale Grocers Association, in his address before the National Canners Association, dwelt largely upon the question on contracts between canners and wholesalers. He said in part:

"There are perhaps, no two interests in the food trade that have such important and intimate business relations as the members of your association on the one hand and the wholesale grocers of the country on the other. It is my personal desire to promote in every proper way the most sound and cordial personal and business relations between these two great interests in the food industry, not only for the benefit of canners and wholesale grocers, but of retailers and the consuming public. And this brings us, of course, to the perennial subject of contracts. I am not a lawyer and I am not in the business of advising how contracts shall be formed, but I know it to be the long-established

policy of our association to recommend forms of contract that are simple and equitable. They have no reference whatever to the question of price. Their sole aim is to remove all misunderstanding and friction between buyer and seller, and to keep the parties away from the lawyers and courts. When a contract is perfectly clear and fair there is never any occasion for any canner or wholesale grocer to resort to litigation or even arbitration. He then has all of his time for his business and his pleasures without the troublesome elements of controversy and litigation. He is more happy and he is more efficient.

"I will not talk to you about the crop clause or other provisions in the contract. We are all human. In some years that people call sellers' years, the canner naturally tries to get some clauses in his contracts that he would not hope to get in a buyer's year. On the other hand,



the wholesale grocer in the years or seasons that are termed buyer's years may seek to include in his contracts clauses that are not regarded by canners as fair or advisable.

"Now, let us come to a new basis. Let our respective contract committees, without formalities, sit down together at the first opportunity, and in a practical way, with fairness and equity as the keynotes, frame a suggested form of contract for use by all of us, that will not be a contract either for a buyer's or a seller's year, but a sound and just and reasonable contract for buyers and sellers in every year.

"My suggestion for an earnest conference regarding contracts is based upon the fact that the prevailing situation with undelivered canned goods sold for future delivery in the hands of both canner and wholesale grocer is really most unfortunate and serious. This condition will inflict itself upon future buying for the present year. In addition, many of you know there is a wide division of views with regard to the buying futures. These views are often emphasized by experiences between buyer and seller in a year such as we have just covered.

### The Question of Prices

"Primarily, food is grown and prepared for consumption with the one idea that it be consumed. It is, therefore, to the canners' interest, as well as to distributors, that it be sold to the public at a price which means that the annual supply is largely consumed before another pack arrives.

"It is absurd to assume that canned food, or any other product, can be manufactured and sold at a loss for any length of time and it is just as absurd to assume that the distributor can purchase these foods and be unable to work out a fair profit on them.

"In the matter of production—do high wages really mean high costs? We too often confuse labor wages with labor cost. There is a wide distinction.

"I do not pretend to know how much the wage earner gets from the total of the canning industry. I do know that to avoid discouragement to labor and the consuming public, wages must be reasonable. Still, the labor cost must be lower. To accomplish this—efficiency and increased output on the part of labor must be brought about—and hand in hand with labor efficiency there must be increased efficiency by manage-

ment, resulting in a lowering in cost of your products.

"Labor costs have been high—too high for business safety. It has resulted in reduced demand and while we cannot agree with many of the demands of labor, an effort must be made to increase efficiency and in this manner maintain a proper standard of living for both labor and investment. To maintain this standard, all our effort should be not to unduly lower the standard of wages as to materially reduce labor costs through efficiency.

"While it is true that in 1920 all foods were produced at very high costs notwithstanding that this year will always be known as a season when conditions in fruit and vegetable belts were ideal, yet the cost of production was very high and because of recent depression, created an impression of over-production, or surplus which tended to depress the market for a loss to both producer and distributor.

"It goes without saying that it is the earnest desire of all packers to produce palatable food as economically as possible, and while high manufacturing costs prevailed in 1920, we all know that present conditions do not spell that prices as low as some seem to think they should be, will be realized in 1921.

### Cost of Cans, Labels, Etc.

"I am not attempting to say that cans, boxes and labels are higher than they should be, but with an advance over 1920, together with the heavy advance in freight rates, I can, in a measure, appreciate conditions for the current year.

"Of course it is to be assumed that the raw product which you purchase will find a lower level than last year, but from the distributor's point of view it would seem that if we are going to get canned goods, as well as other items, to a level in price to attract the consumer by both quality and price, tin cans, boxes and labels should reach a lower level for 1921 pack than they have in the past few years.

"It would seem, therefore, that manufacturers of these items should give serious thought and not endeavor to secure the top of the market, but rather sell the consumer his supplies at the lowest margin of profit, realizing that there are other years to follow, and allow nothing to interfere that would tend to permanently injure the consumption of canned foods."

## Declares Retail Grocer is Wrongly Blamed

J. A. Ulmer, president National Association of Retail Grocers, in an address before the canners convention, declared that the blame, which would place upon the retail grocer for alleged failure to assume his losses in the present business emergency, thus helping to restore normal conditions, is not deserved. We quote as follows from his address:

"The canned food industry has been a wonderful help to the retail grocer. Of the many kinds of foods which the grocer handles there is none that can compare with your product; by the generous application of printers ink you have eliminated the mystery of the tin can. The canned goods department is a necessary adjunct

to every grocery store—not only do canned goods help to make a store attractive, but it is also one of the best paying departments, if properly conducted. No matter where you may go, even in the most obscure part of this country, go into any little shop and you will find on the shelves canned foods which are nationally advertised. No matter how unsanitary that shop might be, your product is a guarantee to the consuming public that it is pure and wholesome, and immune from contamination. The real live merchant features canned goods twelve months in the year, as there is a constant demand for pure canned foods, even when fresh fruits and vegetables of the best quality are obtainable.

"The new inspection service which your as-



sociation has undertaken is an important step in educating the public to the use of wholesome canned foods; it is not only a guidance of assurance with regard to the quality of the product as far as the consumer is concerned, but it also serves as a guarantee to the jobber and retailer that goods bearing this seal have a ready sale.

"However, the National Canners Association must be extremely vigilant to see that every packer who uses this service is complying with every feature of this service; should some careless or unscrupulous canner be shortsighted or negligent he can soon tear down an industry which has taken years of study and good hard work to perfect.

"We as retail distributors of your product welcome this service and hope the time will soon come when all canners of foods will display the seal of inspection.

"A year ago I attended your convention which was held at Cleveland. I had been invited to attend a conference, the purpose of which was to adopt some uniform method of adjustment of swells and springers but nothing developed and the matter was left to stand as heretofore. This is a very complex matter and one that should receive the serious consideration of all concerned; we as retailers meet this question quite often and in many instances it means a financial loss to ourselves, and I fully appreciate the difficulties which confront you. I hope that ere long some thoughtful plan will be found to devise ways and means for an equitable adjustment basis. Our Association will be glad to cooperate with you on this or any other question in which we are both involved.

"The retail grocer naturally deplores the charge of some canners, that we as retailers are responsible for the so-called buyers' strike and the accusation that we are holding out for "war-time" prices. This is a false charge and a serious reflection upon the integrity of the retail distributor of your products. It might be well for authors of these charges to remember that during the war our margins were restricted by the Food Administration, and we were forced to

sell at a figure based upon the original cost price; our invoices were often consulted by local food administrators to see that our prices were fair. Last spring your salesmen came to us seeking orders for fall delivery and they informed us that prices would come down owing to the unsettled condition of the canning industry, while in many instances they predicted still further advances with the result that many grocers stocked up on futures at the highest prices known, yet some canners expect them to take big losses, giving as an excuse that we could afford it on account of big profits made during war time. Let me tell you there were no war time profits for the retail grocer. Our margins were based by the Food Administration according to our original cost and not according to replacement value. The retailer, being the last link in the chain of distribution, has been very much in the limelight the past few months, and the worst of it all is that many grocers who have been charged with profiteering are now facing bankruptcy; not because they were guilty of profiteering but really because they denied themselves a legitimate margin.

This is no time for passing the buck, and the best thing for each branch of the trade to do is to properly adjust themselves to present conditions, with a hopeful outlook to the future. I cannot help but feel that there soon will be a wonderful resumption in business.

"The retail grocer is gradually getting away from the practice of placing future orders. I predict that this year very few future orders for fall delivery will be placed. I make mention of this because I believe that the time has come for the canning industry to work on a different basis; the practice of ordering futures is a very unsatisfactory arrangement from the retailers' standpoint, and associations are discouraging the practice.

"Experience has proven that the retailer invariably can buy to better advantage on the open market, and the buying of futures really is a handicap because of having so much of his surplus tied up in goods for which there is no ready sale."

## Analysis of Probable Conditions in 1921

In an analysis of probable business conditions during the coming year, Ogden S. Sells, president Canning Machinery and Supplies Association, told the National Canners Association that "1921 belongs to the optimists."

"This crisis," he said, "is not the result of over-production, save as over-production may have been caused by under-production. In many lines finished stocks are below normal. Many requirements for goods are still unfilled. Yet with all this potential purchasing power, business has slowed up. What has caused it? To my mind, the greatest factor has been the mental attitude of the consumer. About one year ago we consumers began thinking. Prices are too high, I will go on strike and stop buying. I will make prices come down by withholding my purchases. Did we consumers realize that when we withhold our purchases we force the retail-

ers to withhold their purchases, and that when the retailers withhold their purchases, the wholesalers and jobbers withhold theirs? And that when the wholesalers and jobbers ceased buying from the manufacturers, the manufacturers stopped producing? No. I guess most of us didn't go that far—we only wanted prices to come down. As consumers, we forgot that when the manufacturers ran out of orders, they would be forced to lay off their employees, which meant that their wages stopped. What had been a mental condition up to this point, now became a physical one. We didn't buy that overcoat or that suit of clothes that we really needed, because prices were too high. We made the old ones do. We forgot that when we didn't buy his goods, the other fellow couldn't buy ours. He was out of a job. During those days of high prices, most of us also forgot that a dol-



lar is only a medium of exchange and absolutely without value in itself. You can neither eat it, wear it, nor use it to warm you. It is good for only what it will bring and it is working only when it circulates.

"Yet I believe that when the consumer fully realizes what has happened and begins to buy, buy cautiously, buy carefully, buy intelligently, business will be better. As to when this is coming, your guess is as good as mine, but I think most signs point to an early revival of business. One thing is certain. A year ago our newspapers were filled with editorials and cartoons telling us prices were too high—stop buying! Today we are reading articles urging us to buy if we would live and earn a living. How

long it will take the great public mind to fully sense this fundamental truth I cannot say. But, when it is sensed, do not think that we are going back into an era of extravagant prices, for just as quickly as demand is met with that answer, demand will cease.

"To my mind there are three principal factors controlling 1921's prosperity: the retailer, labor and money. If the retailer reduces his prices to conform to replacement costs, and earns his old percentage of profit, goods will move. If labor renders a day's work for a day's pay, and consents to that day's pay being in line with the cost of living, labor will be employed and thereby given purchasing power. If money grows easier as the economists tell us it will, business can be financed at fair interest rates."

## Dr. C. L. Alsberg Discusses Government Work

In his address before the National Canners Association, Dr. Carl L. Alsberg, chief, Bureau of Chemistry, Department, discussed the proposals which have been made for reorganization of the Government services in such a way as to merge all of the chemical phases in one department.

"It seems at first thought," he said, "very reasonable to assume that because there is chemical work going on in the Bureau of Chemistry, the Bureau of Plant Industry, the Bureau of Animal Industry, the Office of Public Roads and the Forest Service of the Department of Agriculture, and also in the Bureau of Mines and the Geological Survey of the Department of the Interior, in the Bureau of Internal Revenue and in the Public Health Service of the Treasury Department, in the Bureau of Standards of the Department of Commerce and in the Chemical Warfare Service of the Army, there is duplication in this chemical work. As a matter of fact there is not. The chemists of the Bureau of Chemistry are engaged in the main in the study of the food industry; the chemists of the Bureau of Animal Industry are studying the chemistry of the packing house; the chemists of the Bureau of Public Roads are studying road-building materials; the chemists of the Forest Service are studying the chemistry of wood, and of the products obtained therefrom. The chemists of the Bureau of Mines are studying coal and precious metals, minerals and similar products of the mine and of the quarry; the chemists of the Bureau of Standards are studying the chemistry of structural materials and the like used in the various engineering industries. They are all chemists but they are not all doing the same thing. What would be gained by bringing them all together in one place? The mining engineer in the Bureau of Mines would then be compelled to have the chemical phases of his problems studied by a chemist in another bureau, a chemist who was not under his immediate supervision and control. The doctors in the Public Health Service would have to have the chemical examination of and studies upon the stomach contents of patients done in another bureau by chemists over whom they have no control and from whom they would not and could not get that sympathetic understanding coopera-

tion which they would get from chemists within their own organization. It is therefore, obvious that the scientific work of the government cannot be organized effectively by sciences.

### Wrong Conception of Government Activities

"The reason why so many impractical suggestions how to reorganize have been made is that most of us have no conception of the diversity of our government's activities. Our government has been treated in the press as though it were a large corporation and the moral has been drawn that while no corporation would tolerate more than one accounting office, one purchasing organization, one personnel agency, one engineering department, the Government has many. This conception of our Government does it grave injustice. It is an organization immeasurably larger and doing an immeasurably greater volume of business than any corporation of which I have knowledge but the difference between our large corporations and the Federal Government is wider than this. Most corporations exist for one definite purpose, to earn money, and usually they deal with but one type or a series of closely related types of commodities or merchandise. The large corporation, therefore, is a homogeneous organization with but one object. Not so with the Government. The Government has many purposes, some of which are as far apart as the poles. The purpose of the Treasury Department is to collect revenues. The War and Navy Departments are essentially police organizations. The purposes of the Department of Agriculture are purely constructive. It exists for the purpose of promoting production. Its purposes are, therefore, in a sense opposite to those of the other departments just mentioned.

"As a specific example, one might cite the relations of the Bureau of Internal Revenue of the Treasury Department and the Bureau of Chemistry of the Department of Agriculture toward a single commodity, butter. The Bureau of Internal Revenue administers the adulterated butter act which levies a tax upon every pound of adulterated butter. The object in life of the Bureau of Internal Revenue is, as we all know but too well, to collect every cent possible in revenues for the Government. Thus the Commis-



sioner of Internal Revenue is regarded as the ideal official who collects the maximum amount of revenue at the minimum of cost for collection. The more adulterated butter is produced, the more revenue will be collected and the better will be the showing of the Bureau of Internal Revenue. The Bureau of Chemistry, on the other hand, which administers the Food and Drugs Act, has for its aim the elimination of the production of any adulterated butter at all. Can there be two more diametrically opposed purposes than those of the two bureaus, the Bureau of Internal Revenue and the Bureau of Chemistry, with reference to this commodity, butter? One is most successful when most adulterated butter is produced because it collects more revenue; the other is most successful if it prevents the manufacture of adulterated butter altogether. Do any of you know of any corporation with two departments which have so diametrically opposite and different aims as have the Bureau of Internal Revenue and the Bureau of Chemistry with reference to butter?

"There is then this fundamental difference between the ordinary corporation and the Federal Government. The large corporation has in all of its branches a common purpose, the earning of money and it deals with the same general types of commodities. The Federal Government has in its different departments and in the different bureaus of those departments most diverse aims, duties and functions.

#### **Government Like a Holding Company**

"Instead of comparing the Federal Government with a large corporation, it is fairer to compare it with a holding corporation which controls the destinies of a series of separate corporations. I know little concerning the workings of such a corporation as the Standard Oil Company of the old days. Let us assume, however, for purposes of illustration that among the many corporations controlled by that company were, for example, lumber companies making lumber out of which barrel staves for oil barrels were produced; gasoline, lubricating and illuminating oil companies, and a pharmaceutical company manufacturing such drug products as vaseline. I venture to say that anyone with the Standard Oil Company of those days who would have suggested that the lumber and barrel stave company, the pharmaceutical manufacturing company and the illuminating oil and gasoline subsidiary companies should have a common set of offices, a common set of purchasing agents and a common sales force, would have received

a scant hearing. One could hardly expect the lumber company, selling lumber and barrels, to employ the same sales force that would be employed by the pharmaceutical house selling carbolated vaseline and similar products. The proposition is obviously ridiculous and it is equally ridiculous to advocate the complete centralization of analogous agencies in the Federal Government.

"I have heard the recommendations made that all the chemical work of the government be centralized in one organization. Congress unfortunately does not make appropriations for the study of chemistry merely for the sake of adding to the sum total of human knowledge. It makes appropriations for the accomplishment of a specific practical end or for the solution of a single practical problem. Chemistry is merely an incident to the problem; it is merely a method with which the end Congress instructs us to accomplish is reached. Chemistry in the Government service is merely a tool like a typewriter, a desk, a piece of apparatus, a building, or a mechanic. Therefore, to advocate the concentration of all chemical work in one organization is just as sensible as to advocate the concentration in one bureau of all the typewriters and stenographers in the Government service. It would be just as bad administration to ask the Bureau of Mines to have the Bureau of Chemistry carry on all its chemical investigations upon coal, upon the precious metals, upon the problems of metallurgy, smelting and mining as it would be to demand that all the Government services call upon a separate and distinct bureau to do their typewriting work for them.

"Pray do not misunderstand me. I do not mean to indicate that there is no duplication, and that no reorganization is necessary. There is indeed need for reorganization and for co-ordination, but it is not along the lines indicated. It will not make for greater efficiency and prevention of waste to pool all the chemists in one organization, all the physicists in another, all the economists in a third, all the statisticians in a fourth, all the pathologists in a fifth, and so on. What is needed is a rearrangement of work by fields of human endeavor and as I have already indicated so far as feasible by commodities. I have already pointed out why the organization of the government services by commodities so far as feasible should appeal with peculiar force to the canning industry. What is true of canning is equally true of many other industries."

## **Canning Industry Hoping for Foreign Trade Revival**

C. H. Bentley, chairman of the association's foreign trade committee, submitted the following report:

"During the calendar year 1920, the canning industry has been faced with most discouraging conditions entering upon the period of readjustment following the extraordinary demands of the war times and the year immediately following. In 1919, on account of the general food shortage in Europe, there was an extraordinary

demand on the part of the importers of those countries who had been cut off from various food supplies during the war and these commercial demands more than offset the demands made for the armies and navies during the war, with the result that 1919 saw an extraordinary volume of business on the general line of canned foods. Some of the neutral nations like Norway, Sweden, Holland and Denmark evidently anticipated being able to resell canned foods into Ger-



many in addition to their own increased demands needed for their own countries. They bought heavily with that in view. Great Britain did the same thing. The result was that an enormous surplus has been accumulated on the other side on various lines of canned foods.

### Developing Export Trade in Canned Goods

"Following the policy which has been approved at the earlier conventions of the National Canners Association, your committee has endeavored to secure the interest of our Government and of many foreign Governments in the development of foreign trade on our canned food products. It is a well-established fact that many natural markets for our products are cut off by reason of the high import duties and custom house charges levied in most countries against canned foods. Unfortunately for us, in many of these countries canned foods are regarded as luxuries and are classified with expensive products like canned mushrooms, truffles, pate de foi gras and specialties of that kind. Your committee, therefore, has endeavored to secure revision of these classifications through various agencies of our Government and through various semi-public organizations such as the National Foreign Trade Council, the United States Chamber of Commerce, the Pan-American Financial Conference and organizations of that character. By appointment of our president, a delegation was in constant attendance at the National Foreign Trade Council in its annual convention and was represented in practically all of the sections or groups representing different phases of the producing, manufacturing and exporting activities of this country. In the resolutions passed, in the addresses made and in the reports as finally adopted, there can be no question but what the canning industry was clearly recognized as being one of the great and important industries of the country. Similar and successful efforts were made in the other national conventions referred to and while the time is not especially propitious for accomplishing re-classifications of tariff schedules in foreign countries while conditions are so unsettled and indeed chaotic, it can be said that substantial progress has been made.

"Your committee has been in touch with the United States Tariff Commission in connection with a revision of the tariff laws on the part of

the Ways and Means Committee of the House of Representatives. The attitude of your committee has been that while we recognize the need of protecting home industries where their products are brought into competition with similar products produced on lower wage scales abroad, we are nevertheless insistent that there is pressing need for the development of foreign markets and that the Congress in re-writing our tariff laws should give consideration not merely to the need of protection, but also to the pressing need for the development of our foreign markets for the products of many industries now languishing. When one reflects that the canners of milk, sardines, salmon, fruits and tomatoes have been cut off from their foreign markets, it is easy to realize that the farmers and producers are vitally concerned as well as the supply people, the canners and the merchants. It is safe to say, also, that with reasonable development of the foreign markets for peas and corn, we should be able to secure a more stable market for our domestic trade. In other words, the inland packer of peas and tomatoes and corn will find a better market for his products in the domestic trade if the surplus lines of the same products are exported by competitive concerns located nearer the seaboard.

### Endeavoring to Impress Congress

"Your committee is endeavoring to impress these facts upon Congress, believing that the development of foreign trade is not essential to many branches of our industry and the farmers related thereto, but that unless our tariff laws are written with this in mind—having some regard for the need of restoring the buying power of our late associates in war, these countries will never be able to pay the heavy obligations owing to this Government.

"Your committee, therefore, has endeavored to lay these facts before the Ways and Means Committee of the House, where tariff legislation must originate. In this activity we have had the cordial support of many canners throughout the country. Later on, this tariff legislation must come upon the floor of the House as well as the Senate. Your committee, therefore, earnestly recommends that canners generally inform themselves on this question of the tariff as affecting our industry and that they in turn see that their respective representatives in Congress are fully informed on this subject."

## Legislative Committee Reports on Various Bills

D. H. Stevenson, chairman of the legislative committee, reported to the National Canners Association as follows:

"At the last report in Cleveland, Ohio, in August, we called to your attention House Bill, which is now No. 10311, pertaining particularly to the fill of cans and the purport of same being to embody in the present Pure Food Law and thus make it an integral part of same, Food Inspection Decision No. 144. Since that time this bill has passed the House of Representatives and is now in the Senate having been referred to the Committee on Agriculture. Feeling that this

bill was of considerable importance to the canning industry your chairman recently submitted a copy of same to each member of the committee, asking for their opinion, and the vote thus taken was unanimous that no opposition should be voiced against this bill, as it was felt that there was nothing in it that could be construed as a detriment to the industry as a whole.

"At the Cleveland meeting above referred to, House bill No. 11876 was also reported, which has to do with the question of forcing manufacturers of all food products to place their name on the label. Insofar as we know, this bill is



still in the hands of a sub-committee on Misbranding of Merchandise, and it has been deemed advisable at this time that no further action on our part is necessary.

"The already famous Kenyon Bill No. 3944, which came up for discussion before a meeting of the board of directors of this association in August, 1919, and which was the cause of a very lengthy discussion and resulted later in the preparation of a brief presented by Mr. Gerber, together with a committee, before the Senate Committee on Agriculture, has not as yet been disposed of, but as we understand it, it comes up for a final vote in the Senate on January 24th of this year. This bill you will doubtless recall, relates to the control by license of the meat packers and its far-reaching effect on the canning industry, in view of the fact that meat packers are also canners in some instances, is obvious.

### Working for Better Seed

"Under the new proposed Tariff bill, now before Congress, tariff hearings have been arranged by the Ways and Means Committee on different schedules.

"Referring again to the Cleveland meeting, the following resolution was passed on the subject of endeavoring to secure for the benefit of the canning industry the proper seed legislation: 'That it is the sense of the Committee of Raw Products Research that Federal seed legislation is necessary to afford adequate protection to the canning industry in its seed stock problems. It is further the sense of the committee that the canning industry should cooperate with other interested agencies and especially with the National farm organizations in regard to seed legislation to the end that the needs of the industry may be properly embodied in and covered by a comprehensive federal seed law.'

"In an effort to accomplish something along these lines, C. G. Woodbury, head of our Bu-

reau of Raw Products Research, arranged for a conference to be held with the federal authorities, in the office of the Assistant Secretary of Agriculture, Dr. E. D. Ball, on the 14th day of last December. At this conference, your chairman, Mr. Woodbury, and several other prominent canners, were present, and in addition to Dr. Ball a very representative list of those connected with the various bureaus of the Department were also present, which list was as follows: Dr. W. A. Taylor, chief, Bureau of Plant Industry; Dr. Karl F. Kellerman, associate chief, Bureau of Plant Industry; Prof. L. C. Corbett, horticulturist in charge, Horticultural and Pomological Investigations, Bureau of Plant Industry; Dr. D. N. Shoemaker, horticulturist, Horticultural and Pomological Investigations, Bureau of Plant Industry; Carleton R. Ball, cerealist in charge, Office of Cereal Investigations, Bureau of Plant Industry; Dr. A. J. Pieters, agronomist, Forage Crop Investigations, Bureau of Plant Industry; R. A. Oakley, Forage Crop Investigations (in charge of government seed purchases) Bureau of Plant Industry; Edgar Brown, botanist in charge, Seed Testing Laboratories, Bureau of Plant Industry; Prof. W. A. Wheeler, specialist in seed marketing, Bureau of Markets; G. C. Edler, investigator of seed marketing, Bureau of Markets.

### Federal Authorities Willing to Assist

"This meeting was called to order by the Assistant Secretary of Agriculture. There was a very full and free discussion of the canners' difficulty in frequently procuring seeds of various types and varieties which were not true types and which gave the canners no end of trouble. There was a very decided spirit displayed by the federal authorities to assist the canning industry in every way possible towards remedial legislation and I am glad to report that Mr. Woodbury has this matter well in hand and we are hopeful of some substantial results during the coming session of Congress."

## CANADA'S COCOA AND CHOCOLATE INDUSTRY

A preliminary report on the cocoa and chocolate industry of Canada for the calendar year 1919 has been compiled by the Dominion Bureau of Statistics, covering the operation of ten plants, of which five were in Ontario, four in Quebec, and one in Nova Scotia. The total capital invested in the industry in 1919 was \$5,201,523, comprising land, buildings and fixtures, \$1,240,720; machinery and tools, \$993,909; materials on hand, stocks in process, finished products on hand, fuel and miscellaneous supplies, \$1,760,762; and cash, trading and operating accounts, and bills receivable, \$1,206,132. Ontario accounted for \$2,662,112, or more than 51 per cent of the total investment, and Quebec and Nova Scotia combined for \$2,539,411, or about 49 per cent.

The raw materials used by the industry in

1919 and their cost delivered at the factory were:

Kinds of materials	Pounds	Cost value at factory	Kinds of materials	Pounds	Cost value at factory
Cocoa beans	11,924,847	\$2,108,566	Cream of tartar crystals	12,340	\$6,793
Cocoa butter	4,008,195	1,616,545	Essence and essential oils	2,720	9,576
Cocoanuts	a 1,695	352	All other materials	-----	348,218
Milk powder	1,310,875	420,331			
Glucose	504,379	36,772			
Sugar	11,204,670	1,110,595			
Flour	662,840	38,939			
Starch	66,176	6,122	Total cost of materials		5,702,809

a Number

The various products of the industry in 1919 and their selling value at the factory were:

Classes of products	Pounds	Selling value at factory	Classes of products	Pounds	Selling value at factory
Chocolate	22,312,363	\$7,413,830	All other products	-----	-----
Cocoa	1,683,162	562,646			
Confectionery	5,049,900	1,649,780	Total selling value of products		9,718,185

Ontario leads in value of production with a total of \$4,934,845; Quebec is next with \$4,575,203, and Nova Scotia third with \$208,137.



## Foods Found Illegal For Sale In Wyoming

Examples of the difficulties with which some manufacturers of food products encounter in complying with the State food laws are found in the latest report of the Wyoming Dairy, Food and Oil Commissioner, from which we quote as follows:

*Beverages.* A number of beverages have been collected and analyzed and have been found to contain saccharine, benzoic acid, without the presence of benzoic acid being stated upon the label. There are also a number of cases where the manufacturers have failed to state the net contents and their name and address upon the labels or bottles. At the present time, there are a number of so-called "crushes" being manufactured. Some of these drinks contain none of the true fruit pulp or juice and are a gross misrepresentation and a fraud upon the public. It would be well for manufacturers and retailers of soft drinks to note that the use of saccharine is prohibited and that the presence of permitted artificial colors and flavors and preservatives must be plainly and conspicuously stated upon the labels of the bottles, kegs or barrels containing their products.

*Candy.* Some package candy has been collected which has not borne the statement of the net weight. In most instances, however the manufacturers are correcting this condition to comply with the net weight regulations adopted under the food law.

*Oysters.* A few samples of oysters have failed to pass because they were short weight. In computing weights, the drained weight of the oyster meat is determined.

*Jams and Jellies.* Under this class of foods, the chief objection is to the practice of some few manufacturers or jobbers to apply false or misleading labels to jams and jellies which are a mixture of several fruits, calling the resulting product by the name of one fruit. The regulations on this point are very specific, stating that if a jam is composed of say 65 per cent apple and 35 per cent blackberry, it should be labeled "Apple-Blackberry Jam." If in the reverse order, of course, a reversed labeling would be applicable.

*Sweet Oils.* This department has adopted Food Inspection Decision No. 139 of the United States Department of Agriculture, Bureau of Chemistry, which holds that sweet oil is olive oil. A number of pharmacists in the state, being unacquainted with this regulation, have been using cotton seed oil in filling prescriptions for sweet oil. This practice has, to a large extent, been stopped.

*Sauer Kraut.* A few samples of sauer kraut of last year's pick have been found to be short in the drained weight of the contents.

*Vinegar.* Most of the colored distilled vinegar in the state has been removed or seized. It is illegal to sell this article. Uncolored distilled vinegar may be sold. Vinegars which have been reduced by the addition of water, even though the acid content is well above the requirement of the regulation, must be sold as reduced vinegar by manufacturers, jobbers, and retailers.

The following regulation, governing the sale of sugar vinegar, is issued under authority conferred upon the Dairy, Food and Oil Commissioner by Section 5, Chapter 107, Session Laws 1913:

**REGULATION 41, ALL SUGAR VINEGAR MUST BE RETAILED IN BOTTLES, JUGS, OR CASKS, PROPERLY LABELED TO SHOW THE PURCHASER THAT IT IS SUGAR VINEGAR.**

There are some so-called sugar vinegars which consist of varying percentages of sugar vinegar and distilled vinegar. These are held to be colored distilled vinegars, the color coming from the sugar vinegar, and the sale of such vinegars is prohibited.

### Government Controls Dutch Milk Industry

The most extensive system of Government control of the milk, butter, and cheese business ever attempted in peace times has been inaugurated in the Netherlands according to the American consul at Rotterdam. The purpose of the new scheme is to prevent a shortage of milk and milk product supplies in Holland which might result from excessive sales to Germany and from the increasing demand for domestic consumption compared with total production.

The system was inaugurated in its present form Nov. 1 by a proclamation prohibiting the manufacture and export of cheese. The milk producers of the country are divided into two classes, one of which cooperates with the Government bureau and the other of which does not. Producers in the latter class may sell their milk freely but are not permitted to manufacture cheese. Inasmuch as all cheese offered for sale must be marked, this prohibition is very effective.

Those who cooperate with the Government organization are allowed to manufacture cheese from time to time as the dairy bureau of the Ministry of Agriculture may indicate. Manufacture is permitted or not according to the supply of milk available. When manufacturers are notified that fresh milk is needed for distribution, the production of cheese must stop.

The proportion of manufactured cheese that may be exported is also indicated by the Minister of Agriculture. For the present 50 per cent of the cheese produced may be exported. Inasmuch as the export sale is now more profitable than the domestic trade, the demand for export permits is strong, but it is tempered by a tax of 25 Dutch cents per kilogram (\$0.035 per lb.) on all cheese exported. This tax is levied for the purpose of supporting the dairy bureau.

Thus the control of the fresh milk supply is secured by limiting the amount of milk products which may be made. The bureau also controls the distribution of fresh milk by purchasing it and reselling to dealers. At present the bureau pays producers 17½ Dutch cents per liter (\$0.05 per qt. at rate of exchange prevailing on Dec. 11, when a florin was worth \$0.305). The bureau also pays the cost of transportation to the station, which averages 1½ Dutch cents per liter (\$0.043 per qt.) About 264,178 qts. of fresh milk are received and distributed each day.



# Sanitation in Food Preservation

## Safety of Canned Products Depends Not Only on Heat Processing But Upon Simple Cleanliness

BY PROF. E. O. JORDAN  
Bacteriologist, University of Chicago

WHILE dirt cannot now be regarded as the breeding place and origin of most infectious diseases, it just as certainly does play an important part in the modern problem of food preservation and food distribution of which the canning industry is such an essential feature.

The process of preserving food by heat possesses the enormous advantage that the vast majority of known disease germs are killed by even a few moments' exposure to the temperature of boiling water. The use of heated food, therefore, constitutes one of our greatest safeguards against the entrance of disease germs and other parasites through the alimentary tract. The thorough cooking of pork is known to protect against the dreaded trichinosis due to the parasitic worm *Trichinella*. It is well known that many of the most famous instances of food poisoning have occurred after the use of raw or partly cooked foods, such for example as the sausages and other meat preparations made from uncooked animal tissues and used widely in Germany and some other European countries. These outbreaks of food poisoning are due in many cases to certain bacteria resembling the typhoid bacillus which are present in the uncooked food. In some of these outbreaks the fact stands out clearly that only those individuals who have eaten the meat raw or imperfectly cooked have been affected, while others who have partaken of meat from the same animal after thorough cooking have escaped altogether.

In this country, where the use of uncooked meat foods is relatively uncommon, outbreaks of meat poisoning of this type have been rarely reported. It is no wonder that sanitariums have long recognized the value of thorough cooking in preventing infections and that the application of high temperatures to the preparation of food has been called "The greatest sanitary step ever taken by the race." The men of the Stone Age do not seem to have cooked their food, but in the later period, 10,000 or 12,000 years ago, cooking utensils of various kinds were apparent in common use.

While there is no doubt that the heating of food is an important defense against infection, the large-scale preservation of food by heat has met with certain practical difficulties. One of these is the difficulty not so great now as earlier of hermetically sealing the heated food. If the container is not air tight, every housewife and every canner knows that air and the germs may enter and cause spoiling. In the commercial in-

dustry of canning at the present day I understand that while leaky cans sometimes occur they are relatively uncommon.

Far more serious than the problems of imperfect containers is the occasional failure in or upon the food product. This is due to the occurrence among bacteria of certain highly resistant bodies called spores. Not all bacteria produce spores and the true significance of spores in the life of bacteria is not fully understood, although they seem to be a sort of protective device for tiding the species over a period of hard times. Some of them are extraordinarily resistant. I had in my laboratory at one time a bacterium the spores of which would withstand boiling for 16 hours. It is the spore-producing bacteria that make most of the trouble in the canning industry, and the origin and distribution of these forms are consequently of great practical importance. It is a piece of good fortune for the human race that relatively few of the disease germs affecting man possess a resisting spore stage, and in consequence nearly all dangerous bacteria are killed by a few moments' exposure to the temperature of boiling water. This is true of the typhoid bacillus, the cholera vibrio, the ordinary germs of blood poisoning and most other forms.

There are three or four exceptions that should be mentioned: The bacillus of anthrax, a disease communicated from cattle or sheep to man, generally transmitted by wool or hides, and apparently very rarely if at all by food products; the bacilli of lockjaw and of gas gangrene which enter the body through a wound and not so far as known from the stomach or intestines; and the bacillus of botulism which forms its poison outside the human body and does not as a rule appear to invade the tissues. It is the latter only, *B. botulinus*, whose presence in food heated at high temperatures has been definitely shown to cause poisoning and death. The bacilli of lockjaw, gas gangrene and botulism, as is well known belong to a group of bacteria characterized by their ability to grow in the practical absence of free oxygen far below what is needed by the ordinary bacteria. This group of anaerobes, as they are called to distinguish them from the aerobes or oxygen-needers, is a difficult one for bacteriologists to study and our knowledge of them is still very incomplete and unsatisfactory. It is, however, just this group of anaerobes that is of greatest significance in the canning industry. While the spores of oxygen-needing bacteria, even if they survive the heating process, are not able to multiply in the air-tight can, the spores of anaerobes do sometimes find favorable conditions for development



and accordingly multiply until the contents of the can are spoiled or even in the case of *B. botulinus* an intensely virulent poison is produced.

It is therefore upon the anaerobes that the attention of the canning industry should be especially focused. As already stated bacteriologists have much to learn about the characteristics and distribution of this group, and further intensive investigation is needed.

### **Bacteria Often Come from Manure**

There is one fact, however, of very great practical importance that seems to be of pretty general application. There is reason to suppose that the favorite habitat of some of the best-studied anaerobic bacteria is the intestinal tract of warm-blooded animals. The bacillus of lockjaw, for example seems to have a special predilection for the intestinal tract of the horse, and furthermore certain individual horses harbor a much larger number of tetanus spores than do others. It has long been known that manured soils contain a high proportion of anaerobes, and the experience of the fighting armies on the long cultivated fields of Flanders and Northern France has shown us again how terrible under such conditions may be the infection of war wounds with the anaerobic bacteria of tetanus and gas gangrene. Recent observations in California on the distribution of *B. botulinus* spores in nature, although not completed, are highly suggestive. In one instance the owner of a small vegetable garden grew string beans and canned them in the household without any spoilage over a period of eight years prior to 1918. The garden was fertilized with animal manure in 1918, and while the beans grown that year were canned by the same method as previously they spoiled and some jars contained the botulinus toxin.

Here we see the significance of the derivation of the word dirt from drit, excrement. Since all the available evidence indicates that the germs that interfere most seriously with the efficiency and safety of the canning process occur with particular abundance in the excreta of various animals, measures of sanitation in connection with canning may well be directed with special emphasis to avoiding this source of contamination. It is, after all, the dirt of excremental origin that needs to be especially kept at a distance. It might perhaps be advantageous to recognize this fact more specifically than at present in the admirable regulations put forth by the Inspection Service of the National Canners Association.

There is good reason why all foods intended for canning should be freed so far as practicable from any particles of manured soil that may adhere to them when gathered, and why in the immediate neighborhood of a canning plant especial care should be devoted to the proper disposal of all animal excretions. This is particularly true in the case of those foods which, for one cause or another cannot be advantageously treated at very high temperatures. It is possible to use very high temperatures as is done in the case of ripe olives which can be heated to 240° Fahrenheit and kept at that temperature

for 40 minutes without injury—both the danger of spoiling and the danger of botulinus poisoning may be entirely eliminated.

### **Simple Cleanliness Cannot Be Overlooked**

While the safeguarding of the public health and the prevention of economic loss from spoilage are and must continue to be the prime aims of sanitation in the canning industry the question of simple cleanliness is one that cannot be wholly overlooked. Civilized man is no longer content to use a common drinking-cup or dry his hands on a much-used roller towel. He likes also to sit down to a table provided with a clean table cloth and to eat his food out of spotless dishes with spoons and forks of shining silver. He has lately shown signs of interest in the cleanliness of the methods used in the preparation and transportation of his food, as well as in its serving. He does not like to see street dust blowing over loaves of unwrapped bread and he wishes to feel assured that all his food is prepared and handled under reasonable cleanly conditions, even though it may not be possible to trace any specific diseases to various untidy practices. Here is one of the great opportunities for sanitary achievement in the methods of food preservation. The excellent rules and regulations of the Inspection Service of this association constitute a long step in the right direction and will not only inspire the confidence of all fastidious consumers, but will be a powerful educative influence, creating a demand for sanitary inspection service where before none existed.

There is of course a possibility of trouble here which has doubtless been foreseen by many. It is that so many and so expensive sanitary requirements may be established that the cost of food may be raised beyond a reasonable point. The absolutely necessary health requirements can be met quite simply and at moderate cost. Everything beyond this is deserving of the most careful consideration. The degree of cleanliness upon which one insists in one's everyday surroundings is determined by one's pocketbook as well as by one's preferences. Gilding the lily has an economic as well as an esthetic side.

The milk business offers a familiar example of the desirability of scrutinizing proposed sanitary requirements. We are now told by the bacteriological students of milk production that the main source of bacterial contamination lies in the utensils, and that the character of the barn and hay lofts is not so important as once supposed. It has been shown that sanitary milk of low germ content may be produced with a relatively simple and inexpensive equipment, and the elaborately costly surroundings do not increase proportionately the hygienic value of the product. It is well therefore in each case to determine whether the advantages of a given procedure are commensurate with the expense.

### **The Use of Bacteriological Methods**

I cannot let slip the opportunity of calling attention to the necessity of using bacteriological methods to determine the ways and means of sanitation. Since all the known dangers from



food infection and from food spoilage are due to microbes it is evident that a study of the life history of the microbes, of their resistance, of the physical and chemical conditions of their life and of the places in which they are found must constitute the very essence of sanitation. For unless sanitary measures are directed towards the control and suppression of germ life they are quite without meaning. We must know where and how to strike, and we must follow in the laboratory the results of such methods as are put into effect in order to know whether they are achieving the desired end. Bacteriological studies furnish the only means of knowing where to direct our efforts. The introduction of sanitary methods without knowing whether they are precisely what is needed or whether once in operation they are reasonably effective may lead to much loss of time and energy. The fullest knowledge of the problem is desirable. It is not very long ago that city health departments were accustomed to spend thousands of dollars in the gaseous disinfection of rooms after a case of infection with no results in the suppression of communicable diseases at all commensurate with the expense. Yellow fever could not be successfully combated until its manner of transmission by the mosquito had been discovered. There is then the fullest reason for maintaining and intensifying the work of bacteriological research upon which this association has so wisely embarked. It strikes at the very heart of your problem and cannot fail to yield results of the highest practical importance.

To summarize the trend of opinion on food sanitation it may be said that first of all come measures designed to promote the safety of food products. Few food industries are in a position to satisfy this requirement so completely as those engaged in food canning. Exact experiments in many laboratories have shown the degree and period of heat exposure necessary to insure the certain destruction of all dangerous bacteria. Among the other measures contributing to protection against dangerous spoilage few have so much to recommend them as the removal of particles of manured soil by thorough washing with clean water. The cleaning of all vegetables, fruits and other foods before canning will give some protection against the introduction into the canned food not only of germs dangerous to health but of the germs that cause simple spoilage with its consequent economic loss. Finally, sanitary measures may well be directed to securing in addition to the perfect safety of canned foods a reasonable degree of cleanness so that the average consumer may be assured that at least the same amount of care and skill has been used as would be used in his own home. All sanitarians in this country have watched with deep interest and appreciation the broad-minded way in which the National Canners Association is attacking this important problem, first by finding out what the actual situation is, second by promptly introducing remedial measures wherever they are indicated.

# Food Product Reform In America

## Great Strides Which Have Been Made in a Generation; Canning and Dehydration to Assure Future Food Supply

BY DR. HARVEY W. WILEY

PRIOR to the enactment of the Food and Drugs Act, wherever you went throughout the country in the closed season for eggs, viz., from December to March, you were very uncertain in ordering eggs for your breakfast, as to what you were going to get. The bad egg was so common in a service of this kind, that one was continually disposed to look for it. He in fact, felt a certain degree of disappointment when he found his egg was reasonably fresh. This improvement in the egg supply has been due solely to the activities of the Bureau of Chemistry, and especially to Dr. Pennington, in improved efficiency of selecting, storing, candling and handling stored eggs. Like many other food products in the egg world, there is a period of plenty, and a period of want. If the fresh egg can be properly stored at a low temperature just above the freezing point, and this supply of eggs properly handled, it may be brought

through the warm months in excellent condition. The candling process has been so perfected and refined by the Bureau of Chemistry, and its active workers, as to practically eliminate all imperfect eggs from commerce.

Another reform, not quite so perfectly carried out, is that of the oyster supply. In the old days, the oysters were taken from their salt beds, placed in fresh water until they swelled up to two or three times their normal size, opened, placed in casks with a large piece of ice, and shipped to different parts of the country. When they arrived at their destination they were tasteless, jelly-like masses from which practically all their palatability had been extracted.

Two great reforms were introduced into this service. In the first place, the taking of oysters from polluted waters for interstate shipment was prohibited. In the second place, the floating of oysters for the purpose of increasing their size was prohibited. In the third place, the shipping of opened oysters in contact with ice



was prohibited. It was required that ice be packed around the containing body and not in contact with the oysters themselves. These wise precautions, though not as fully carried out as could be wished, have served to greatly increase the oyster trade. At the present time, persons in the interior may get oysters nearly as fresh and wholesome as when they were first opened.

### Cereal Foods Keep Naturally

Foods, in general, are of two kinds insofar as their keeping qualities are concerned. The cereals are types of foods which keep naturally. If you keep cereals dry, properly ventilated and free from infection by insects, they will last indefinitely. Therefore, although produced at certain periods they are easily available for even distribution over the entire country.

On the other hand, fruits, especially peaches, must be harvested and consumed at once, or prepared in a proper manner for preservation either by treatment with sugar, by high temperature, or by dessication. This means that the fruit crop of peaches must be delivered promptly from the hands of the producer. The apple crop is of the same character, except that apples will keep excellently in cold storage while peaches will not.

Inasmuch as the food of the country is practically the same in quantity every day, the whole system of production, preservation and distribution must be so ordered as to deliver 1-365th of the food requirements of the people every day. Hence, it is seen that the problem of distribution in food products is quite as important as that of production.

The part of science is to study those processes which will make it possible to produce this even distribution with the least expense to the consumer, and the least detriment to the food. It is the part of political economy to study these problems from the economic point of view so that the rights of all parties concerned may be properly safeguarded and protected. Thus it is seen that the problem of food products is a double one. The economical problem and the scientific problem. I do not propose to discuss the economic problem except to say a word in favor of that factor in the economic problem which is most likely to "get it in the neck," namely, the farmer and the orchardist and the dairyman. Because of the lack of organization among these elements, the economic problem is not so well balanced as it should be, but this element of danger is rapidly disappearing and the great producers of the country, from the agricultural point of view, are now organizing in large bodies, not for the sake of doing damage to any other element, but solely for the safeguarding of their own best interests.

### The Scientific Factors

The scientific part of distributing the food product lies in the proper preservation of food in a manner best suited to conserve its nutritive elements. There are three leading ways in which this conservation is conducted. One is by cold storage. This is particularly important in the keeping of eggs and fruits and is of less urgent importance in the distribution of meats. Cold

storage is one of the great blessings to the food world. It is unfortunate that, like other good forces, it may often be, and often has been, used for improper purposes. That, however, does not in any way lessen its importance from the truly scientific point of view. But cold storage is not a suitable means of carrying food supplies over one season. The crops of the earth are now so easily interchanged that we are not likely to face a universal famine. In other words, the crops of the year are sufficient for the necessities of the people, and the crops of one year, therefore, should not stand in the way of the crops of another. For that reason, it is proper to limit cold storage to a definite period.

In the distribution of meats, cold storage is only a prime necessity for the ordinary ripening of the meats and their transmission to a market. The killing of meat animals is a daily occurrence and, therefore, the daily supply does not depend upon detention. There are certain meats that improve on keeping, as, for instance, beef and mutton. There are other meats which are designed for curing before use. This is particularly true of pork, and cured pork does not need cold storage.

There are, however, peaks of production which need to be cared for, as, for instance, the farmer has more meat animals to sell from the first of October to the first of January than he has from the first of March to the first of October, and hence some reasonable storage capacity is allowable.

The second great means of effecting a daily supply is sterilization, commonly though improperly called canning. This has grown to be one of the great elements in food distribution, and it is not for me in this presence to say how great the improvement and reform has been along this line. It is hardly a reform, it is a revolution which I, myself, in my short life have seen arise and pass to its full fruition. I doubt if there is another one element in food distribution which has been carried to the perfection which has been reached by the so-called canning industry. The men who have carried this great work on are my personal friends, and you know them as well as I. It would be invidious to even try to mention them by name. In fact, the thousands of men who are represented here today, in person or by proxy, are all in the list and are all contributing to this great forward movement in sterilization. The housewife who has a supply of these sterilized products on hand is always ready for any emergency, whether the telephone becomes disconnected and she is unable to order her supplies, or whether a snow storm keeps her at home. If friends drop in she always has something to eat, and that something she can rely upon as being free of any injurious contents, and prepared under the supervision of experts throughout the whole country. Fruits, fish, meats of all kinds, and food products of every description are thus rendered available for daily consumption in harmony with the great law of supply and demand.

### Importance of Dehydration

The third great method of bridging over the period between production and consumption, so



as to secure an even and daily distribution of food products, is dessication, or dehydration. There is no difference in the meaning of these two terms. One is Latin and the other is Greek. The most modern process, of drying products at a low temperature is very jealously designated as dehydration, while the old method of drying foods at a higher temperature is not allowed the benefit of this name. This is a trade distinction and not an etymological one. It needs no argument to show that if foods can be dried at a low temperature they are less likely to suffer injury, both in the solubility of the materials which they may contain, and in damage to the vitamins therein. The use of large bodies of heated and filtered air to effect the dessication is now the most modern improvement along this line, and is likely to produce the greatest benefit. The processes of dehydration, while applicable to all kinds of foods, are particularly suitable for drying leaf vegetables, milk, eggs and fruits. In the case of milk and eggs the albuminous portions of these bodies are not rendered insoluble by this process and, therefore, the milk and the eggs may be easier restored to their natural condition. I say to their natural condition. Of course, this is quite impossible, but, to a condition closely approximating the natural.

Fruits that are dried in this way can easily be restored, or reconstituted, in such a way as to deceive even an epicure. I have eaten apple pie made of dehydrated apples which I was not able to distinguish in flavor and character from the pie made from the fresh apples. This reform, therefore, is likely to be the one in the future which will make the most rapid progress and utilize some of the most economic possibilities.

If I may be allowed to give a word of advice to the National Canners, I would say that they first of all should be parties interested in the fur-

ther development and application of the dehydrating process.

#### Assuring a Future Milk Supply

In the matter of distribution of milk particularly, this process has the greatest possibilities. The accumulation of great centers of population, although to be deprecated from the humanitarian side, seems to be inevitably interlocked with the development of manufacturing and commerce. The four or five million people, for instance, in and near New York City are likely to be eight or ten millions before another quarter of a century rolls by. The supply of fresh milk to this immense population is one of increasing difficulty. When it comes to the relief of the suffering and the starving, especially the children across the water, the sending of fresh milk is totally impossible. Evaporated milk is only milk condensed to one-half its volume, while dehydrated milk contains only from three to five per cent of moisture. Thus, the dehydrated milk furnishes the most certain, safe and economical supply of milk for the starving children of Central Europe and Asia Minor.

What is imperative, therefore, is a method of distributing 1-365th part of the food of the country for the year each day. The reforms in food products which I have briefly outlined indicate the methods by means of which this great problem can be successfully carried out. The application of scientific economics to the problem from an ethical point of view will secure the largest reward for the farmer who produces, the manufacturer who prepares the product for distribution, the railways that carry them, the jobber and wholesaler who deal with them in mass, and the retailer who is the final purveyor. Thus these two great sciences of handling foods, the physics and chemistry of the process on the one hand, and the economical conditions on the other, must join hands in order that a satisfactory daily food supply may be given to the Nations of the World.

## Weight Variations in Package Foods

**H**OW much variation in the weights of package foods will occur from the weights stated on the label when the weighing and filling is done in accordance with good commercial practice, is a question that arises frequently in the work of the food packer and the food control official. An answer to the question will be found in Department Bulletin 897, recently issued by the Bureau of Chemistry, United States Department of Agriculture, entitled "Weight Variation of Package Foods."

As the result of an extensive investigation of the commercial weighing and filling of package foods, including a study of the machines used in weighing and filling, by the Bureau of Chemistry, it is now possible to determine whether any particular lot of package food has been weighed and filled in accordance with good commercial practice. The bulletin, containing the results of the investigation, outlines methods of weighing as practiced by 126 commercial firms, describes

weighing machines in use, reports experiments on good commercial practice methods, shows the maximum errors both by calculation and observed results, compares hand weighing with machine weighing, and gives specifications for good commercial practice in weighing.

The food packer can use the information contained in this bulletin to check and regulate his methods of filling his packages of food. He can determine whether or not he is putting into the package the amount of food he aims to put in. The food official can determine, when he finds any shipment of food in package form which is incorrectly labeled as to weight, whether the variation is probably due to the variations that will naturally occur in packing food, or whether it is due to intention to pack short weight.

The results of the experiments are applicable to such products as baking powders, buckwheat flour, cereals, cocoa, coffee, cloves, corn flakes, corn starch, cream of tartar, cream of wheat,



farina, flour, hominy, honey crisps, maize, malt breakfast foods, nutmeg, oatmeal, pancake flour, pepper, puddine, rice, rolled oats, salt, soda, split peas, shredded cocoanut, sugar, tapioca, tea, and wheat flakes.

Good commercial practice in packing such foods is specified as follows:

1. That packages of 5 pounds and below be weighed net; larger packages may be weighed gross and tare.

2. That the following types of scales be used:

For packages of 5 pounds and below:

Even arm balance, 1-pound beam, 1/4-ounce graduation.

For packages over 5 and under 25 pounds: Even arm balance, 2-pound beam, 1/4-ounce graduation.

For packages of 25 pounds and above: Platform scale, 50-pound beam, 1/4-pound graduation.

3. That scales meet the tolerances prescribed in Bureau of Standards Circular 61, and be used at 20 per cent or more of their capacity for packages of less than 25 pounds and at 10 per cent or more of their capacity for larger packages. Tare weights may be made on the same scale as the gross weights.

4. That the exact balance be estimated to within one-half of the sensibility reciprocal of the scale and the poise be set to within one-fourth of the minimum graduation on the beam.

The following table shows the calculated maximum errors of good commercial practice:

	For net weighing		For Gross and tare weighing	
	On single packages	On the average of a representative sample	On single packages	On the average
	Ounces.	Ounces.	Ounces.	Ounces.
2-ounce .....	0.150	0.097	.....	.....
3-ounce .....	.150	.097	.....	.....
4-ounce .....	.150	.097	.....	.....
8-ounce .....	.150	.097	.....	.....
1-pound .....	.213	.106	.....	.....
2-pound .....	.360	.145	.....	.....
3-pound .....	.363	.148	.....	.....
4 pound .....	.409	.194	.....	.....
5-pound .....	.409	.209	.....	.....
10-pound .....	.544	.373	0.674	0.414
25-pound .....	5.41	2.68	7.49	3.34
50-pound .....	5.41	2.68	7.73	3.57
75-pound .....	5.65	2.92	7.73	3.57
100 pound and above....	5.65	2.92	8.29	4.13

Copies of this bulletin can be obtained free upon application to the United States Department of Agriculture, Washington, D. C.

## What Are Vitamines?---Best Described By What They Do

(Prepared by U. S. Bureau of Chemistry)

**W**HAT are vitamines?

This is a question asked repeatedly since the importance of these compounds in foods has come into prominence, but no definite answer has yet been given. Investigations by scientists at universities, agricultural experiment stations, and institutions for medical research have revealed much information regarding the function of vitamines in body maintenance and building, and the parts of the various foods in which they are to be found.

That vitamines are compounds absolutely essential in the food, in order to maintain the weight of the body and produce growth, has been definitely proved. The lack of vitamines causes deficiency diseases, so named because they are due to lack of something in the diet. Vitamines are present and are needed in such small quantities in the food that chemists have not yet been able to isolate them from the many other compounds which are in foods. For this reason, we know very little of the actual character of vitamines.

### Three Types of Vitamines

According to a statement by Dr. Carl O. Johns, in charge of nutrition work in the Bureau of Chemistry, U. S. Department of Agriculture, vitamines have been classified into three different types depending upon the functions which they have in promoting well-being and growth.

The first type is known as water-soluble vitamines and these are necessary in order to obtain growth from food. Lack of these cause beri-beri, which manifests itself by disease of the nervous system and by other symptoms. These vitamines are found in seeds, in green plants, in certain bulbs and fleshy roots, and in milk and eggs, as

well as in certain organs in the animal body. The seeds referred to include beans, nuts and the various cereal grains. When cereals are very highly milled in order to obtain a very fine white flour, a large part of the vitamines may be removed. Vitamines are also lost when rice is polished in order to remove the outer layers which contain most of the vitamines. It is for this reason that a diet consisting mainly of polished rice may cause beri-beri, while unpolished rice does not cause this disease.

### Fat-Soluble Vitamines

The second type is known as fat-soluble vitamines, and these are found in butter, eggs, milk, and certain animal organs such as the heart, kidneys, and liver, and to some extent in other fats as well as in green vegetables. They also exist in smaller quantities in certain seeds. When fat-soluble vitamines are absent from the diet animals and man are subject to a disease of the eyes, which appears to be related to xerophthalmia and which, if prolonged, may produce blindness.

The third type is known as antiscorbutic vitamines—that is, those which prevent scurvy, which manifests itself by disease of the bones as well as in other ways. These vitamines are found in oranges, grapefruit, lemons and other citrus fruits, and in green vegetables such as tomatoes, spinach, and lettuce, and in eggs and raw milk. The drying of vegetables frequently destroys the activity of the antiscorbutic vitamines. The best source of vitamines is in the leafy parts of vegetables, and this is one of the reasons why spinach, lettuce, and cabbage are valuable foods.

The full results of Dr. John's investigations will soon be published in a bulletin of the Bureau of Chemistry.



# Food Supply Ample Without Imports

## Committee on Statistics and Standards of Chamber of Commerce Refutes Theories of Possible Shortage in United States

The Committee on Statistics and Standards of the Chamber of Commerce of the United States has published a comprehensive report, entitled "The Relation of Food Exports and Imports," which tends to disprove the statements of some economists that the industrial growth of the United States, at the expense of its agricultural growth, will in time cause us to depend to some extent on foreign sources for our food supply. The committee, of which A. W. Douglas of St. Louis is chairman, contends that this prediction is "foolish and unfounded." Extracts from the report are printed below.

**D**URING the past few months the increase in our imports of food products, accompanied by a corresponding decrease in our exports of these commodities, has given rise to much discussion as to the ability of this country to feed itself. The conclusion reached by some statisticians and experts is that our industrial development is proceeding at such a rate, and so obviously at the expense of our agricultural growth, that it is only a question of time until we must import more and more food products for our constantly growing population. It is not a new story, having bobbed up and died down many times since Malthus started the original trouble a century ago; but it is just as foolish and unfounded now as it was then, and as it will be for some generations to come. And all because those who entertain this belief do not seem to have given the subject any intelligent analysis and study.

In the first place, for twenty years exports of agricultural products have exceeded imports in very large measure. In 1919 they were twice as great as imports. There does not appear to be any relation in any one year between increase and decrease in exports and corresponding changes in imports. Other than the growth in wealth population of this country, there does not seem to be any common cause affecting the steady growth of both exports and imports. In 1901 the exports were about double the value of the imports, and this was true also in 1919.

### Exports Steadily Increased Prior to War

Prior to the war our exports of all foodstuffs steadily grew, while during the war they nearly tripled. We not only had sufficient for our own population, but vast quantities to spare for hungry Europe. One of the especially foolish and unknowing statements concerning this matter is that we drew so heavily on our food resources during the war that we are now forced to call upon other countries to supply our needs. As a matter of fact, we have more cattle and hogs now than when the war began in 1914, and as many sheep. Moreover, we harvested in 1920 one of the greatest crops of food products ever grown.

There is another slant to this story. Of many of the food products that we import we likewise re-export an appreciable proportion, as is the case with coffee, tea, cocoa, sugar, and like import commodities. Hence, the total of our imports of such products is not retained for domestic consumption.

Another import phase of the matter is that all the articles we import under the classification of food products are not food for human beings. Some of them, such as oilcake, bran and the like, are for livestock only. There are vegetable oils, which are used for mechanical purposes, and some in the manufacture of soap and similar articles, and are not food at all. This is true likewise of some of the preparations of cocoanuts. Of the cattle imported, some are for breeding purposes, while a large proportion go to the packing houses, and thence some of them find their way into the export trade. There were also alcoholic liquors, which are barred for the future. We draw heavily on foreign countries for such delicacies as pickles, sauces, and peanut and olive oils for salads, which appeal to our palates and not to our necessities. But by far the greatest proportion are commodities which we cannot produce in this country at all, or else in only limited measure, largely for lack of suitable climate. These articles, such as coffee, tea, sugar, bananas, cocoa, and cocoanuts in their various preparations, in 1919 represented over 70 per cent in value of the imports of food products. They are significant of our growing omnivorous appetite in eating and drinking and of our ability and inclination to gratify our palates and to indulge our increasing catholicity of taste in the delicacies and luxuries of the table. Scarcely any of these imported commodities are essential to our existence, though habit has almost made them so. They will always figure largely in our imports because we are not likely to raise them in this country to any great extent, save sugar; and for the latter we shall probably always depend largely upon the outside world because our appetite for it grows faster than our domestic production, which supplies only 25 per cent of our consumption.

### Home Production of Imported Articles Increasing

Some of the important items of imported foodstuffs which have greatly grown in use in this country are sugar, coffee, tea, chocolate and cocoa. To some extent we shall gradually increase our domestic supply of these articles. We will grow more sugar beets, and probably more sugar cane; we are experimenting with tea in South Carolina; but, in the main, our dependence for these luxuries must be on the Tropics. The importation of these articles, especially in the



large measure in which we consume them, far from being a proof of our failing powers to provide ourselves with necessary food, is merely an indication of our growing wealth and the diversification of our tastes.

The custom of reckoning our exports and imports in the unit of dollars and cents is very misleading, especially as to recent years. The real unit is that of quantity, since it alone indicates both the actual and comparative amount of our imports; for the value of all articles fluctuates so constantly and often so widely as frequently to mislead us. We imported more coffee in 1915 than in 1916, but the 1916 values are greater. Again, in 1919 the value of coffee imported was more than double that of 1917, while the gain in quantity was only five per cent. Similarly, in 1919 the amount of cocoa imported was only four per cent greater than in 1917, yet the increase in value was about forty per cent. In 1919 the value of imports of sugar was over sixty per cent greater than in 1918, but in quantity only forty per cent. In each instance the discrepancies between the units of quantity and of value are due to the heavy advances in price, especially sugar and coffee. In 1920 this will operate to give the impression of an enormous increase in the importation of food because of the unprecedented high price of sugar and the preponderating proportion of sugar in the value of food imports. With the price of sugar declining materially, we will draw the false conclusion that our food imports are largely decreasing. These are good illustrations of what statistics are worth when taken at their face value and without careful analysis.

The real crux of the question lies in the nature of food imported, as to whether it is a thing of necessity or merely a matter of taste and fancy. In the answer to that lies the ability, or lack of ability, of this country to feed itself. Bread and meat, grains and meat animals are the elemental essentials of food with us, and in these essentials we have always been the best nurtured people in the world.

#### Large Gain in Export of Breadstuffs

Exports of breadstuffs for the past decade have at all times been far in excess of the imports and have increased in much greater proportion; imports have fallen off decidedly since our entry into the war, while there has been a marked growth in exports. Our principal imports are rice, corn, wheat and such farinaceous substances as sago, tapioca and the like. Our imports of wheat are mostly from Canada and prior to 1916 were negligible, never exceeding four million bushels in any one year. In 1917, because of the stress and exigencies of war, they rose to thirty-three million bushels but rapidly declined to eight million in 1919. The necessities and reasons for such importations are purely sporadic; often they are due to temporary needs of localities close to Canada, or to the desire to mix Canadian grain with domestic varieties for flour purposes. As against this, exports of wheat in large volume have always been one of the features of our foreign trade. In fact, we always have a surplus which has no other market than foreign countries.

#### The Situation as to Wheat Exports

There has been a good deal of foolishness written in the past about the diminishing proportion of wheat exports to wheat production being one of the evidences that we are fast becoming a food importing nation. As usual, it was a case of academic theory against common sense and facts. Export figures do not indicate any definite trend whatever in any direction, either of increase or decrease, except that the movement of exports follows very closely the trend of domestic production. The principal factors seem to be the amount we can spare, the foreign demand, the supplies which the other wheat-exporting countries have to offer and the nature and extent of their competition.

Meanwhile, we have largely increased our production during the past decade. We have adjusted our yields to the needs of the country, and we can always be sure that we will raise all the wheat we need whenever there is the incentive of prices sufficiently remunerative to the farmer.

So far as corn is concerned, its principal use is as feed for livestock and poultry, as only about 5 per cent of the annual production is consumed by human beings. We made a virtue of necessity and of our patriotism during the war by pretending to like cornbread, but we discarded it very promptly when the armistice came. Our exports for forty years prior to the great war ran anywhere from twenty-five million to two hundred million bushels annually, or from 1½ to 8½ per cent of our total production; nor did the war cause any special increase. Our imports have never exceeded twelve million bushels in any one year, and are running about four million bushels annually. They are mostly from the Argentine, for use as feed for cattle, and to go to a few seacoast localities because of price. Argentina raises about half as much corn as either of the states of Iowa and Illinois, while we produce about 70 per cent of all the corn grown in the world. Those who from statistics (wrongly and partially interpreted) prophecy the time in the near future when we will be importers to any extent of either wheat or corn, only remind one of the saying of Artemus Ward that "it is better not to know so many things, than to know so many things that ain't so."

The story of rice is the most remarkable of all the foodstuffs. Prior to the last quarter of a century, its consumption, in any considerable volume, was confined almost entirely to the Southern States, where it was daily food, as a vegetable, and not as a "side dish." Within that period we have more than doubled our production as the knowledge spread that it is the most nutritious and economical, probably of all of the grain foods. We have always been large importers, but during the past five years our exports have grown so fast that they are about on par with imports.

This brings into consideration another interesting phase of foreign trade. We frequently import and export the same articles, usually because there is some difference in them and we demand both kinds; sometimes, and often, because the foreign articles is cheaper and ours possesses the better quality. There is also the further phase, that no intelligent opinion of the subject can be formed by merely examining import statistics



without comparing them with similar export figures.

Imports of live animals are principally from Canada and Mexico, both cattle and sheep. They come in response to a higher market. On the other hand, our exports are chiefly cattle sent to both Canada and Mexico, and sheep to Canada. This presents one of those curious paradoxes of foreign trade, similar to that presented by rice.

#### **Decrease in Beef Exports Since War**

Since the war our exports of beef, both on the hoof and as packing house products, have shown a tendency to decrease, for the trend of the beef supply in this country is to adjust itself to the natural laws of supply and demand. At present, prices of cattle are lower than prevailed at the high points of 1919, and the high price of feed makes cattle feeding unprofitable. The result is seen in the decrease of cattle in this country. So that any subsequent increase will hang upon a more logical adjustment of the cost of feed to that of cattle. Similarly, foreign importations are not likely to be attracted to our lower markets. Higher prices will meet with a quick response in increased production and numbers, so that this problem is likely to be adjusted automatically by domestic supplies according to supply and demand, rather than by foreign importations.

Hogs are entirely a different story. Our imports of live hogs are negligible, being mostly for breeding purposes, and our exports are not of much greater consequence, although at present probably 60 per cent of all the hogs in the world are to be found in the United States.

Of our exports of meat, most of it in the form of packing house products, hog products in various forms constitute by far the greater part; in 1919 they were 80 per cent of the total. For a number of years they have been the backbone of our meat exports and this will probably continue so long as we retain our supremacy as the largest breeders of hogs in the world, which in turn means so long as we are also the greatest producers of Indian corn in the world. Nor is there the slightest chance that any one now living will ever see this supremacy seriously questioned.

The principal practical limit to an increase in the number of hogs in this country is simply the matter of demand. The entire hog population is practically renewed each year, as the number slaughtered each year is approximately the number born that live to maturity. From 1914 to 1919, under the stimulus of war prices, the number increased 20 per cent, or twelve million hogs.

There has been a steady and unprecedented increase in exports of meat and dairy products, which reached the enormous total of one billion dollars in 1919, as against imports of less than one-twentieth in value. Exports of fish have also overtaken and passed those of imports.

#### **Even Fruit and Nut Exports Exceed Imports**

The story of fruits and nuts is once more that of a small beginning in exports, but with exports finally overtaking imports. Of imported fruits, bananas form more than one-half the total; cocoanuts in their various form hold a similar position in nut imports. Neither of these articles can be raised in any quantity in this country because they are practically products of a tropical

climate. Both of them are luxuries rather than necessities, and not at all essential to our daily diet. On the other hand, we are growing in this country many fruits for which we depended fifty years ago almost entirely upon imports for our supply. This is particularly true of citrus fruits, oranges, lemons and grape fruit, which we now export much more largely than we import. It is probably only a question of time until the same story will be true of some of the other fruits and nuts, notably olives, almonds, walnuts and peanuts, because of the steady increase in the production of these commodities in this country.

While vegetable oils are classified under food products, they do not all serve that purpose. A large proportion of them, for instance, are used in the manufacture of soap and like articles. Of the imports, cocoanut, olive, palm, peanut, and soya bean oils form the greater portion. We shall probably continue to import cocoanut oils and palm oils, because we cannot produce them in this country; but we are already large producers of peanut and olive oils and should finally be self-contained on them. Spices, which are principally a tropical production, form a large part of the imports classified as food products.

#### **Alarmist Cry Not to be Taken Too Seriously**

In view of these facts it is difficult to see how any one can take seriously the alarmist cry of our being dependent in the near future upon foreign nations for our food supplies, especially when we consider the possibilities of food production in this country and the abundant harvests of 1920 in the face of most unfavorable conditions of weather and an unprecedented shortage of labor. The subject is not one of merely academic discussion, nor merely an interesting mental exercise. We learned during the war that a nation's power of resistance, in the last analysis, is synonymous with its ability to feed itself; and the inability of Germany continually to do this was one of the compelling causes which finally brought about her surrender. The wear and tear of actual battle was not nearly so ominous to England as the threat of the U boats to starve her into submission. So, in times of peace, a well-fed and well-nurtured people are a nation's chief concern and reliance; and this can never be so true as when the nation produces its own food supplies in abundance.

#### **Coffee and Sugar Exchange Officers Elected**

The New York Coffee and Sugar Exchange has elected the following new officials: T. S. B. Neilsen, president; Manuel E. Rionda, vice president; C. H. Middendorf, treasurer, all of whom are elected for a term of one year.

Members of the board of managers elected were: A. Schierenberg, Benjamin B. Peabody, E. L. Lueder, George H. Finlay, Franklin W. Hopkins and John H. Windels. These officials were elected to fill original vacancies and their term of office is fixed at two years.

Horace Havemeyer and C. J. Walter were elected to fill unexpired vacancies for a term of one year from date.



# EDITORIAL

## ANNOUNCEMENT

With this issue, THE AMERICAN FOOD JOURNAL enters upon a career of widened usefulness. The food industry has long felt the need of a broad-gauge publication which would effectively co-ordinate the various branches—the manufacturer, the distributor, the scientist, food control officials and those who, like domestic science teachers and nutrition experts, have much to do with educating the public in the use of proper foods.

There are many sources of information on food subjects, but the industry has lacked a medium through which this information might be sifted and unified. The busy workers in all branches of the food field have time to read little of the diffuse forms of information of value to them. It will be the purpose of this publication to digest and make easily readable the data now to be obtained only through the most diligent searching of multitudinous reports, bulletins and magazines.

Scientific articles, matters of widespread trade interest from a commercial viewpoint, legislative and regulatory matters from Government and State sources and other subjects of interest and value will be presented in every issue of THE AMERICAN FOOD JOURNAL.

The publishers believe there are large possibilities for a journal rendering such a service to the food industry. In this connection, there will be a strengthening of the paper's editorial service; its circulation will be extended, not only in numbers but in representation of the various important elements of the food industries and there will be a broadening of its functions in many directions that will, we hope, entitle it to recognition as the representative publication of the food field.

Publication offices have been established in New York and important additions have been made to the management personnel, these being but preliminary steps in the program of development the publishers have marked out for themselves, and in which they seek the earnest co-operation of those engaged in food work in all its branches.

THE AMERICAN FOOD JOURNAL was established in Chicago in 1906 in the same year that the Federal food law was passed by Congress. In its fifteen years this publication has been a consistent advocate of wholesomeness and sanitation in food products and of honesty in labeling. It has worked with the Federal and State food control officials in attaining the po-

sition of excellence which the American food industries have reached today, and at all times it has received the earnest support of manufacturers, distributors, food scientists and those in charge of food regulations who likewise have been interested in placing the business of food production on the highest possible plane.

In broadening its editorial functions, THE AMERICAN FOOD JOURNAL will in no way sacrifice any of the principles for which it has stood. While the need for preaching wholesomeness in foods and honesty in labeling has practically passed, there are other services of equal importance which a journal such as this can perform that should prove of great value to all branches of the American food industry.

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## The Moral Obligation Implied in Sales Contracts

UNQUESTIONABLY the most serious problem which has come to the business world out of the unusual experiences of 1920 is that of the sanctity of contracts. Admitting that wholesale bankruptcies might have followed the absolute refusal of sellers to accept cancellations, the fact remains that a campaign of education is needed to impress upon all buyers the moral as well as the legal obligation contained in the properly drawn sales contract. Many large companies have been obliged to accept losses running into the hundreds of thousands of dollars because of repudiation of contracts by their customers. In saving themselves from possible business ruin, buyers unfortunately thought lightly of their obligations, nor did they give any great degree of consideration to the situation in which those companies which constituted their source of supply might find themselves.

Responsibility for this state of affairs cannot always be properly fixed. A retailer cancelled his orders with the jobber, the jobber cancelled his orders with the manufacturers and in many instances the manufacturer was obliged to go back to the source of his supplies. An endless chain of cancellations was thus produced. In many commodities there was a great deal of speculative buying, which aggravated the situation.

Legal actions have resulted in numerous cases; but there are thousands of contract repudiations which left ample basis for damage suits, in which there will probably be no court controversies because of the natural hesitancy which every seller feels in suing his own customers.

While it is probable that a condition such as existed in the latter part of 1920 will not be repeated in many years of business life, it nevertheless devolves upon everyone to be more careful in selling and more careful in buying. Moreover, the buyer should be forewarned in all dealings that a contract is not an option to be broken at will, but that certain obligations go with it which must be lived up to.



# C O M M E N T

## Commissioner Foust Says a Good Word For Food Manufacturers

THE attention which is often given in the public press relative to infraction of the Federal and State food control laws no doubt causes misgivings on the part of the buying public as to the integrity of many of the food products they buy. It is unfortunate that more is not said about the large percentage of manufactured food products that are absolutely honest. Sometimes there is recognition of the great body of manufacturers and distributors who are doing their very best to provide the right sort of products for the consuming public and who strive scrupulously and successfully to vend their wares in strict accordance with the letter as well as the spirit of Federal and State laws. Such recognition of these manufacturers and distributors is given in a recently monthly bulletin of the Pennsylvania Bureau of Foods, and it is regrettable that there isn't wider distribution of the good things that may today be said of the vast majority of food producers.

Food Commissioner Foust of Pennsylvania, in the bulletin referred to, says that he "might name some business folks whose very names are the best possible guarantee of the purity of the products they turn out." He adds that "it is a fact that if all who make or supply articles of food were as scrupulously honest as the majority \* \* \* we might easily get along without food laws or food agents."

"Let us think sometimes," he says, "about the honest manufacturers, the upright vendors of life's necessities in the food and drink line. Let us commend them for their sincere and upright conduct. Let us commend their conduct to the imitation of those who for one reason or another have failed to reach their high level. Perhaps the day may come when Pennsylvania can point with pride to the complete absence of violations of the law among the makers and vendors of food products. Let us work toward that end."

Incidentally, Commissioner Foust points out how housewives can help and have helped toward securing pure food. He warns housewives that careful selection of the best products is true economy in the long run.

It is true that there has been an amazing improvement in the food situation in the past few years. Many of the present violations are due to ignorance rather than wrong intent. Therefore it behooves every food manufacturer no matter how small his output or how limited the area of its distribution, to keep fully posted on the regulations, the interpretation of them by courts and public officials and the new laws that may be introduced. In the dissemination of information of this character this publication has for many years been recognized as of great value, not only to food control officials, whose work is made easier by proper education of manufacturers, distributors and consumers, but by the manufacturers and distributors, themselves, who are thus able to keep fully informed as to developments along lines of food regulatory work. THE AMERICAN FOOD JOURNAL is broadening its facilities for complete recording of these facts.

## The Chemist Is Coming Into His Own

SUCCESSFUL business today depends to a very large extent on the chemist in the laboratory. Usually he is tucked away in some out of the way corner of the plant, where he is supposed to work out the foundation upon which the future expansion of the business is to be built. Great honor and credit is due to many of these chemists who have been handicapped, first, by not being understood and then by having to work with inadequate apparatus and materials. Some of the country's large industries have in the past few years learned the value of chemists and are building separate buildings modernly equipped for their chemical and research work. The chemist is coming into his own. In the food industries this is particularly true.

It is unfortunate that many business men have looked upon the chemist as a conjurer who dreams of things and then steps into a laboratory and puts them together. Such is not the case. All results of chemical investigations are brought about by hard work and study, combined with good judgment.

Chemists in this country are now doing great research work. It is a question how the people in the large cities would live if it were not for the discoveries made by chemists employed in canning plants, bakeries and other large food manufacturing plants. There is the chemist who is working on processes for dehydration; drying fruits and vegetables so that they will come to us clean and palatable.

The chemist is making a distinct place for himself in many industries, and there is no branch of manufacturing in which there are greater possibilities than in food production. Let us welcome the day when food manufacturers will realize the advantage of establishing their own chemical research department.

## Ripe Olive Packers Protect the Public

THE recent unfortunate outbreak of botulinus poisoning by spoiled olives has been the cause of much unfavorable publicity to the packers. We are glad to record that the California Olive Association of Los Angeles has helped to make a recurrence of the trouble impossible by aiding the passage of strict State laws enforcing sanitary methods of packing.

The problem of finding an effective remedy for this condition was solved after unhampered and extensive investigations by the ablest scientists in the country. They discovered that all danger could be eliminated by sterilizing the olives at a temperature of 240 degrees Fahrenheit for forty minutes, and this requirement has been incorporated in the law.

We are glad the California Olive Association met the trouble and did its part to eliminate it, thus reestablishing public faith and setting a precedent in good business principles.

## The Keynote of the Canners Convention

The canners are devoting themselves to three things. They are trying to get better products to put into their cans; to canning raw products in a more perfect manner, and to educating the public to greater appreciation of canned goods.



## CORRESPONDENCE

### The Position of the Wholesale Grocer in 1921

Editor, The American Food Journal:

No business is more important or more necessary than that of producing, manufacturing and distributing of foods for mankind. There are over 4,000 wholesale grocers in these United States engaged in this essential industry of buying and bringing foods from all parts of the world to feed the people. Many hundreds of millions of dollars are required to carry on this great business. Several hundred thousand people are engaged in this task and the average toll taken for this service and capital invested is about 2 per cent on the sales.

The wholesale grocer realizes that he is dealing in the necessities of life and that they must be sold on a close margin of profit, and in the most efficient and economical way possible. Ninety-nine wholesale grocers out of a hundred believe that there is an honor in business that reckons with all justly, that regards fairness and kindness more highly than goods or prices or profits. On this high plane, or platform, is this business conducted. When the Government, during the war, placed the wholesale grocer under a license system and virtually took over the business through regulation, all cheerfully consented, although it meant a big financial loss, because they were doing their "bit" in winning the war.

Food items were sold without regard to cost of replacement—a plan that could but bring ruin if carried out for any great length of time. As an example, they were compelled to sell sugar for \$10 a bag, although it would cost them \$20 a bag to buy sugar. This, of course, is contrary to all common sense and would spell ruin to any business, and that is the reason why so many wholesale grocers have had to suffer a loss on sugar.

Many of them bought just enough sugar to take care of their trade, paying as high as 27 cents per pound and were compelled to sell this sugar at 10 cents per pound. This loss could have been taken care of if they had been allowed to sell their cheap sugar based on cost of replacing same, but now many of them face some very serious losses, not only on sugar but on many other items that have declined in value.

The wholesale grocer is quickly adjusting his business to meet changing values and soon will have his house in order. Losses and shrinkages have taken profits earned in the past two or three years and in some instances eaten into the capital, but by good judgment, practicing economy and preventing waste, the industry will in a few years recover these losses.

Now there will be more competitive conditions and food prices will decline to the basis of supply and demand. The wise business man will go on a readjustment basis as soon as possible, forget the past and think only of the future, placing the foundation of his concern on a solid and conservative platform so that a prosperous, lasting and honorable business may be his in years to come, as no doubt this country is in for some

good paying business for a man who meets conditions and puts his house in order.

Oscar B. Mc Glasson, President,  
Chicago Wholesale Grocers Ex-  
change, and Vice-President and  
Secretary, McNeil & Higgins Co.

### British Find Method of Drying Strawberries

A method of drying strawberries has been discovered as a result of experiments made by the food investigation board organized under the British Department of Scientific and Industrial Research in London. The product has the appearance of a small reddish fig and the consistency of raisins or sultanas. It retains the strawberry flavor and differs from a fresh strawberry in the same sense as the raisin differs from the grape. The dried fruit keeps well and is not attacked by molds. It has from one-quarter to one-fifth the weight of the fresh fruit.

Experiments have also been made with frozen strawberries. The results showed that, with a considerable difference between varieties, strawberries which had been held in a frozen condition for several months appeared to be suitable for jam-making. The acidity increased in the frozen fruit, and from the point of view of the jam manufacturer this was an advantage.

It was also found that strawberries when picked ripe might be held in cold storage in a good marketable condition for six to seven days. Green strawberries do not ripen normally in cold storage, nor do they ripen when transferred to normal temperatures after a period of cold storage.

The board also discovered that the employment of certain artificial atmospheres in the storage chambers greatly extended the storage life of strawberries. For example, strawberries when picked ripe can be kept in excellent condition for the market for three to four weeks at 1 to 2 degrees C. if maintained (1) in an atmosphere of oxygen, soda lime being used to absorb the carbon dioxide given off in respiration, or (2) in an atmosphere containing reduced amounts of oxygen and moderate amounts of carbon dioxide obtained by keeping the berries in a specially designed closed vessel. Under both these conditions of storage the growth of parasitic and saprophytic fungi is markedly inhibited, but in each case the carotenes of the berries lose their green color after two weeks.

### Tea Association Elects Officers

At the thirty-third annual meeting of the Tea Association of the United States, 198 Water street, New York, the following named members were elected to office:

James M. Montgomery, president; Robert F. Irwin, of Philadelphia, vice president; Henry P. Thompson, secretary, and Thomas Dunne, treasurer.

The term of office is fixed at one year from date of election.

Members elected to fill vacancies on the outgoing board of directors are as follows: D. N. Payne, Herbert G. Woodworth, of Boston; Harvey Swinnerton, J. F. Hartley, C. E. Atwood, A. Alden, S. L. Davis and Robert L. Hecht.



# Storage of Fruits at Freezing Temperatures

## Recent Studies at California Agricultural Experiment Station Have Yielded Promising Results

**M**ANY quickly perishable fruits such as berries, apricots and cherries cannot be held successfully for very long periods at the usual cold storage temperatures for fruit, of 32° to 35° because of rapid softening and decay. If held without preliminary treatment at a temperature of 10°, low enough to freeze the fruit, there is a tendency in certain fruits for the color to become brown and the flavor to be seriously impaired. At this low temperature molding or fermentation does not occur and ripening processes are effectively arrested. This method of storage should have wide application if the problems of retention of color and flavor could be satisfactorily solved.

### Studies Made in California

Recent studies along these lines by Messrs. Cruess, Overholser and Bjarnason at the Agricultural Experiment Station, Berkeley, California have yielded very promising results which should be of great interest to cold storage establishments, ice cream manufacturers, fruit preservers, confectioners and others. The fruits used in the investigation were Oregon grown cherries, and California strawberries, loganberries, red raspberries, currants and apricots. Grape juice was also subjected to freezing storage. The observations of the treatment were made after six to ten months storage.

*Cherries.* Untreated cherries, both pitted and unpitted, stored in open containers at 8°-12° soon became brown in color throughout by oxidation. Freezing the untreated cherries in water probably as a result of the exclusion of air, the natural light pink color of the Royal Anne being well preserved. The substitution of syrups varying from 10 to 40 per cent cane sugar content seemed to be no improvement over water as a storage medium, in so far as retention of color, quality and texture of the fresh goods was concerned, although the syrups added something to the flavor.

Heating the fruit to 175° in water or dilute syrups before storage resulted in bleaching of the color and imparting a noticeable cooked taste. Hence heating the fruit before storage is inadvisable and an unnecessary expense. Untreated cherries stored at 32° soon became moldy.

Cherries stored in sulfurous acid were greatly inferior in flavor to those stored by the various freezing methods.

*Apricots.* This fruit gave excellent results in several methods of storage at 8° to 12° because of its table color and rich flavor. The skin of the whole untreated fruit, as well as the skin and flesh of the halved untreated apricots became brown at 8° to 12°. The fruit in both cases after several months' storage developed a very disagreeable "cold storage" flavor rendering the products made from them almost inedible but when stored in water or syrups of 30 and 50 per cent cane sugar, the halved fruit retained a remark-

ably fresh flavor and color, although the fruit softened noticeably on thawing.

The crushed fruit with an equal weight of sugar added retained its fresh flavor and color when stored at 8° to 12°, while very ripe fruit required only about one-half of its weight of sugar to give good results. Fruit crushed with no sugar added, became brown at the surface, but the remainder of the lot to which air had no access was of excellent color and flavor, indicating that sugar is not necessary for the retention of flavor and color of the crushed fruit.

Crushed apricots stored at 32° spoiled in about two weeks, but with an equal weight of sugar added it kept perfectly at this temperature. This same mixture heated to 212° and stored at 32° kept well, but possessed an "apricot preserve" flavor.

*Loganberries.* This fruit is very satisfactory for freezing storage on account of its extremely rich and permanent flavor and its deep color. While this fruit kept fairly well without treatment at 8°-12°, there was considerable shriveling and some loss of color and flavor. Untreated crushed fruit kept perfectly and seemed equal to the fresh article in every way. Sugar added to it richened the flavor by reducing the tartness.

A noticeable "jam" like flavor was imparted to the crushed and sweetened fruit when heated to 165° and to 212°. Heating is not recommended although it does deepen the color of the juice and softens the fruit.

Untreated fruit became moldy at 32° in less than three weeks time.

*Red Raspberries.* Untreated fruit stored at 8°-12° shriveled slightly but retained its color and flavor quite well, while addition of sugar caused better retention of the fresh fruit aroma and flavor, less sugar being required than in the case of loganberries. Heating the fruit before storage imparted a cooked flavor.

*Currants.* Untreated currants retained their color and flavor remarkably well at 8°-12°, but addition of an equal weight of sugar to the crushed fruit before storage improved the keeping qualities of the flavor. Heating before storage is not recommended because it does not improve the keeping qualities and injures the flavor.

*Strawberries.* Untreated berries in open containers shriveled slightly and lost some of their flavor in freezing storage. Excellent effects were obtained, however, if this fruit was packed in water or dilute syrup before storage at 8°-12°. The flavor of the water packed batch was entirely satisfactory, the effect of the addition of sugar was to give a richer flavor. Strawberries held untreated at 32° spoiled in less than six weeks.

Heating the berries previous to freezing storage is not necessary and further is objectionable due to impairment of the fresh fruit flavor.

*Grape Juice.* All grape juices stored at 8°-12° were very much superior in every respect to the same juices preserved by pasteurizing at 165°. The bright fresh color of the juices from freezing



storage was in great contrast to the brownish red color of the pasteurized juices. Pasteurized Muscat juice possesses a strong characteristic "raisin" flavor while the juice held in freezing storage resembles the fresh juice in flavor and aroma.

#### Results Very Satisfactory

The various fruits that were submitted to freezing storage treatment over a period of several months were made into various products such as jellies, jams, canned fruits, preserves, candied fruits and ice cream. The results showed conclusively that this method of preservation is far superior to any other in use where the fresh fruit flavor is desired in the final product. Especially pleasing results were obtained in ice cream. The only difficulty encountered was in attempting to make jellies with the fruits that had been packed in syrup before storage. While the jellies were of good color and flavor, for some reason not understood the sweetened fruit would not give a firm jelly. This defect was not obtained when the jellies were made of unsweetened stored fruit.

From Bulletin No. 324, Agric. Exper. Sta., Berkeley, Ca., 1920.

## MACARONI MAKERS ASK HIGHER DUTY

Benjamin R. Jacobs Appears Before Senate  
Committee at Washington

On behalf of the National Macaroni Manufacturers Association and the Alimentary Paste Manufacturers Association, Benjamin R. Jacobs, who is in charge of the laboratory maintained by these organizations in Washington, appeared before the Senate committee which is conducting hearings on the proposed tariff bill and urged increased rates of duty on the products manufactured by members of these two associations.

Mr. Jacobs estimated the production of macaroni in the United States in 1920 would reach 450,000,000 pounds. The industry has expanded 50 percent during the period of the war. Imports in 1914 amounted to 126,000,000 pounds. Practically all the expansion that has taken place is due to the inability of foreign countries to export their products to this country.

"From 90 to 95 percent of the total imports come from Italy," he said, "and the rate of duty does not seem to have a material influence on the quantity of the product imported." The witness claimed the cost of producing macaroni in this country, exclusive of packing or selling expense, is from 3 to 3 1-2 cents, depending on the manufacturers size, equipment and production ability. Labor represents 60 percent of the cost. In Italy the highest wage is paid to the man who runs the presses and is from 18 to 22 lira per day, a sum less than 80 cents. The pressmen in this country receives from \$30 to \$36 a week.

#### Sold on Small Profit

"Due to the large number of small manufacturers and to the simplicity of the process of making this product, particularly when it is not dried and cured before being consumed, macaroni is sold on a very narrow margin of profit. The price of package macaroni was 9 1-2 cents per pound in January, 1913, and 16.6 cents per pound in December, 1918.

"This is less than a 75 percent increase, whereas in the same period other cereal products of the same general type increased anywhere from 100 to 400 percent. These small manufacturers who produce 20 per cent of the total output, carrying practically no overhead and counting no labor but their own, always will be able and are now able to prevent any undue increase in the price of this product. A reasonable protective rate of duty cannot be used by the domestic manufacturer to increase the price unduly to the consumer.

"We request that Paragraph 191 of the Tariff Act of 1919 be changed from "Macaroni, vermicelli and all similar preparations 1 cent per pound" to "macaroni, vermicelli and all similar preparations, without eggs, 3 1-2 cents per pound, and macaroni, vermicelli, noodles and all similar preparations containing eggs, 4 cents per pound."

#### Would Be Added Burden

In opposition to this the Italian Chamber of Commerce, New York, declares it "is firmly convinced that any addition to the present tariff of 1 cent per pound would be an added burden which imported macaroni, already greatly handicapped, could not endure and which is entirely unnecessary for the purpose of protection and inadvisable for revenue."

The war put a stop to exports from Italy to the United States and domestic producers took advantage of the opportunity to fill the home requirements, at the same time improving the quality of their product. Excellent macaroni is made in this country today, it is declared, and over which the imported macaroni would still enjoy a preference with many. There is really no great difference in their comparative intrinsic quality, it is said.

For the present, it is said, the home producers need have no fear of foreign competition. It is impossible under present conditions for Italy to again become a factor in this market.

Importers also claimed that domestic macaroni, selling at the rate of \$1.70 per box of 20 pounds, the equivalent of \$1.87 per box of 23 pounds, shows an advantage in price of something like 63 cents. The importers stated that the present duty provides ample protection for the American industry.

#### What They Say About Us

"I am pleased to note that the articles which you run in The American Food Journal, are snappy, interesting and helpful to those engaged in the distribution of food products."

McNEIL & HIGGINS CO.  
Wholesale Grocers  
Chicago



# Psychology of Consumer Preference

## What the Buyer is Influenced By in the Purchase of Food Products —Importance of Brand and the Label

BY RUSSELL B. KINGMAN  
President, Purity Cross, Inc., Orange, N. J.

OF course, the greatest creator of preference is advertising, in the accepted practices of national or local publicity. As this happened to be my business for some years, I could talk long on the creation of consumer preference from this viewpoint. But general advertising for his brand is usually impracticable for the average canner. So I am going to confine myself, more or less, to ways and means which may concern not national advertisers, so much as all canners.

"The Psychology of Consumer Preference." The one formidable word in my title is "psychology." Webster defines it as "The science of the mind—systematic knowledge and investigation of the powers and functions of the mind." As related to canned foods, let's define it. "What is there about some products, some packages, some brands, or what are other special considerations that influence preference for a given product."

A test in the psychology of consumer preference was recently made and resulted in the following table of persuasiveness. Out of a possible 100 points the appeals ratio was as follows:

Healthfulness	92
Cleanliness	92
Appeal to appetite	82
Quality	72
Reputation of Firm	58
Guarantee	58
Economy	48

Let us start at the consumer, and trace back to the producer. Canned food purchases may be divided into two great classes:

1. Those staples which are bought from daily habit. For such a product a woman will not usually shop around.

2. A staple or a specialty bought with thought, for a special occasion, for a guest, or a special purpose. For such a product a woman shops, and buys with greater care.

It is the staple canned foods that concern this audience for the most part, so we are concerned especially with this "habit" purchase. The maker of a staple product would do well to conform as closely as possible to established consumer custom. But the man who can thus conform, but add a point of preference, even a slight preference, may enjoy in what is the vastness of American staple markets both a tremendous outlet and an almost impregnable position. To change a food habit is as difficult as to create one. Witness the soya bean, or onion salt, or dehydration, which however worthy or economical, have had to meet the barrier of food habit. It took a world war to compel the

use of vegetable shortenings. But this matter of "habit" is the greatest protection to a worthy canner's brand, or to the man who is entitled to the protection of an idea sufficiently practical and original to compel for him consumer preference to the extent of habit.

### Factors in Consumer Preference

The factors conducive to consumer preference or any canned food may be divided into three general classifications:

1. The package and product.
2. The trade
3. The manufacturer

In the package, the most natural thing to think of, is giving a larger package for the money. The large can may arrest the eye of the women in search of bargains. But a large package is not always appreciated. A certain manufacturer of a staple breakfast food having unusual facilities for turning out his product cheaply, put upon the market a package twice the size for the same price. At first thought it would seem that double the quantity, and the consequent saving would double the sale. It developed that simply on account of consumer habit it did not sell as might be expected. It isn't always price—witness the recent canned food declines which have not materially increased consumption. Why? Because the consumer habitually buys staples when needed, and thus does not always buy a can of tomatoes because cheap.

Again, the size of package depends upon the nature of your retail outlets. A big can for the money would influence consumer preference in the poorer sections, whereas a big can might arouse suspicion as to quality if your outlet is largely among the better grocers.

The shape of the package has been found, psychologically, to have an interesting effect upon the consumer. Twenty people were blindfolded, given a two second glance, and again blindfolded. It was found that height rather than diameter, upon two cans of same cubic contents, proved uniformly preferable to the low or squatty can. When in doubt, then, choose a high can.

Any really novel shaped staple can is out of the question, because of mechanical limitations, sealing operations, and what would be the increased expense of the can. But the value of an especially shaped can perhaps offers opportunity to the inventive or creative canner. Particularly the members of our syrup section know the notable Log Cabin Syrup can. The Log Cabin Syrup tin, by its shape and lithography, suggests the maple forests, and who cannot recall



the delightful cool fragrance of a maple or pine forest? Thus does the imagination contribute to the appetite. Here we have a package that actually creates relish for its contents.

### Importance of the Label

Next we come to the label. Here we have one of the greatest opportunities within the reach of any and every canner. Out of hours, a hobby with me has been a study and collecting of the art of the great printers and designers. Possibly for this reason I have been asked to touch particularly upon the psychology of the label.

Given a No. 2 can. Externally this package is exactly the same whether it contains a sub-standard or an extra fancy grade. The label, then, is often what attracts a customer for the first time. If your quality is right, it will do the rest.

When you were young, why did you rig yourself out so carefully when you went to call upon your best girl? It was because, whether you considered yourself a "standard" or an "extra standard" you wanted to appear "extra fancy." You wanted her to fall in love with you, and quickly! Every man here would like to have the consumer fall in love with his product at first sight! Still when a product goes forth to court the consumer, some insist upon dressing it in overalls, in the garb of "'Way down yonder in the cornfield."

Mr. Bok one time remarked in my hearing that he edited *The Ladies' Home Journal* for an actual woman. She was a typical plain, fine type of American womanhood. Mr. Bok would ask himself in connection with each article he published: "Would this interest this ideal woman?"

He knew her standards, her likes and dislikes. I have often thought that it was his careful study of this woman's character that has largely spelled the great circulation of *The Ladies' Home Journal* today.

In my study of the retail grocer, I have come to believe that he unconsciously follows largely the desires and preferences of the two or three women whom he considers his star customers. Let one of these women praise an article and that grocer is strong for it. Let her complain, and it is difficult to undo his prejudice. Let one of these women call for a certain brand, and he will put it in. But let several of his more ordinary customers call for a brand over and over again, and that retailer will probably lend a deaf ear!

When it came to placing the first order for Purity Cross labels, one of the largest and best known label companies informed me that I was wild to want such a label. But to have followed his advice, would have been to accept the typical label, one of the many, and one which would not particularly inspire consumer preference. Though we had to do it quite contrary to advice, we adopted a very practical label from the noted French Rococo period of design, and these labels have delivered a consumer preference, and a dealer display preference, which plain money could not buy. Still they cost no more than for ordinary labels.

### A Fine Design No More Expensive

The ink and the paper cost no more for a really fine design than for an ordinary one. It is largely a matter of taste. You may or you may not have a natural instinct for things artistic. But the housewife, your ultimate customer, is sometimes more discriminating than we of purely commercial life. Many of these women know more about the color of a piece of silk than you or I, more about the design of a nice rug or tapestry. If you would attract the discriminating consumer, you would do well to insist that the design on your label be at least based upon the great classics of design. Nobody in the last hundred years has improved upon the great art of Goeffroy Tory as a designer, or of Caslon and his letter. The rush of modern commercial art has eliminated anything really fundamentally creative about modern design. Do not assume that it is high-brow to make the most out of your label from the classic in design, any more than it is high-brow to make the most in quality from the acreage at your disposal. When the discriminating housewife recognizes really good taste in the design of your label, psychologically, she assumes that the contents of your package is of equally good taste.

You may say that a really classic label is lost on the many unthinking consumers. But if it costs you no more, you have all to gain and nothing to lose in appealing to the 25 percent of consumers who more or less appreciate the beautiful, the type of consumers whose preference influences the entire grocery trade more than the mere number of these women would indicate. The label must do its practical commercial sales job, but it can work just as well for you if cloaked in really good taste.

And when it comes to the copy or the phraseology on a label, I cannot too strongly suggest the avoidance of superlatives. The public is sick of superlatives. It prefers a sane statement. It resents your trying to "put anything across." Modestly, truthfully, believably state your case, and have the goods to back it up.

In connection with the container, we would do well to consider for a moment the net weight of contents. The canning industry for the most part, in its usual bow to custom, has considered its problem one of essentially satisfying the trade, and out of this has grown custom and staple-weight packages not founded, in some instances, upon general consumer preference. There are some packages which entail a more or less constant left-over portion of the contents, which considerably inconveniences the housewife, necessitating her placing left-overs all too much in the ice-box, the original use of her purchase having expired. You will win irrespective of "trade" custom, if your net weight fills simply the widest needs of the most families at the lowest consistent price to the consumer.

I shall pass lightly over the kind of container. Glass has its advantages and its disadvantages. It should be remembered, however, that sometimes a fancy leader in glass will carry a brand of canned staples into consumer preference, and the display given by the trade to fancy glass goods would bring to the sales of a brand of sta-





# Certified

## —the last word in food quality

### *A Partial List of WILSON'S Certified FOOD PRODUCTS*

Hams  
Bacon  
Cooked Hams  
Oleomargarine  
Shortening  
Kettle Rendered Lard  
Salad Oil  
Canned Corned Beef Hash  
Canned Lunch Tongue  
Canned Rolled Ox Tongue  
Canned Vienna Style Sausage  
Canned Roast Beef  
Canned Pure Pork Sausage  
Canned Corned Beef

*Ask your dealer; if he cannot supply you please give us his name. We can stock him quickly. as our distribution is national.*

We will gladly mail you, free, a copy of "Wilson's Meat Cookery," our book on the economical purchase and cooking of meats. Write for it now. Address Wilson & Co., Dept. 146 41st and Ashland Ave., Chicago.

Closest to your heart is the welfare of your family. One of the most important duties you have is the selection of foods they shall eat. You want to be absolutely sure that those foods are clean, pure and health-making.

The Wilson Certified label is a genuine help to you. It protects you; it guarantees that our promise is being kept to the letter, that we have "Certified" the foods it identifies, and that they will be appreciated by all, from the man or boy with his fondness for corned beef hash to the tiniest tot who can hold a piece of crisp bacon in his fingers.

Depend upon it absolutely, for the Wilson *Certified* label is earned only by foods of the choicest, highest quality, selected, handled and prepared with the *respect* due that which is to be served at your table. It is the last word in assurance that the food it distinguishes is pure, appetizing and especially good—food that you and your family will *enjoy* eating. This label is our good name. It means as much to us as it does to you. We are jealous of it. We cannot permit the Wilson *Certified* label to be on a food that will not please you the utmost.



# The Wilson label protects your table



ple canned goods, if properly coupled to it, certain advantages which should not be overlooked.

### Consumer Knows Goods By Their Brand

As to your brand; like a label a brand is married by a business. Like your wife, you never have a thought of divorce if you have the right one. You talk to the consumer through your label and quality. But she knows you by your brand. So your brand cannot be too strong in its appeal or too nice in its suggestion.

1st: It should be short enough to be easily remembered.

2nd: It should be suggestive of quality.

3rd: It should be unique enough or original enough to attract attention.

There are two ways of creating a brand. One by inspiration, the other by perspiration. You may have to wait for the inspiration, but nine times out of ten you will find that the perspiration method is the better.

To illustrate the steps in the creation of a brand, perhaps I can do no better than to take our own brand as an illustration. I waited for an inspiration. It finally became a matter of desperation. One Sunday morning in disgust, I threw my pencil down on the paper, beaten by the problem. But it made a dot. Now a dot you will grant is no trademark. But a trademark should be as simple as possible. I drew a line. Next, naturally, I drew another line over it. But then I had a Geneva or a Grecian cross, which I could not use in all colors because it simulated the National Red Cross. So I curved these lines into an odd bow shape. In the result I know I had what we wanted. Thus came the "cross-mark." I prefixed the word "Purity"—hence the Purity Cross Mark. The mention of the brand Purity Cross would assist the memory as to the trademark. On the other hand, a view of the trademark being an odd-shaped cross would assist the memory in association with the brand Purity Cross.

I have always believed that a brand should be cemented, if possible, to its trademark. It thus kills two birds with one stone. In other words, combining the brand name with the trademark itself permits of driving home your identity, at about half the cost and effort of promoting two separate disconnected elements that do not tie up to each other.

The good book says "If thy eye offend thee pluck it out." If your brand lacks selling punch or consumer attraction, change it. If do not refer to nationally advertised brands so much as to the average canner's brand. To change a brand for the better is not so difficult as you might at first think.

Some years ago I was called into consultation by a company packing a general line, established in the '80s. Many were their brands. Their leading brand had no particular consumer appeal. They had lived with it so long, however, that to change it seemed to them utterly impossible. The first year we printed the new brand in small type in parenthesis under the old, and incidentally featured the new trademark. The next year we printed the new brand and trademark as the main feature, the old in parenthe-

sis. And the third year, we featured the new brand and trademark only, without losing a single customer. They are now enjoying the increased sales of a brand which really appeals to the consumer.

Our next consideration is the product. I would say that here we have two sub-divisions:

1st: Quality and guarantee.

2nd: The prestige attached to the manufacturer's identity.

It would be trite for me to dwell upon the necessity for quality. Nor am I going to dwell upon the elemental necessity for sanitation and preparation of a food product under model conditions. This angle in consumer preference will be thoroughly covered throughout this Convention, and is fully reflected in the Inspection Service of the National Canners Association.

### Advantage of "Money Back Guarantee"

Why not gain the advantage of extending a guarantee to the consumer? As a whole the American public is honest. I have placed a "money back guarantee" on my own labels, and I give you my word I have yet to receive from a consumer a request for money to be returned. The human elements of uncertainty that enter into all canned foods manufacture, if manufacture is really carefully carried on, are so relatively small that this guarantee in the assurance that it gives the consumer, provides a consumer preference that costs the producer little or nothing.

And now we come to the canner. In relation to the trade, many a canner is a better talker than packer, for he makes a mountain out of his mole hill. But then, we have the opposite extreme among canners, in he who really packs quality and who quietly exercises a consistent and careful supervision, who however is not a loud talker, and who thus sometimes is prone to put his light under a bushel.

I believe Emerson said that if a man could make a better mouse trap the world would make a beaten track to his door. Quality alone will bring you preference, but quality unaided by promotive ability will make you wait all too long for the recognition you deserve. Don't be afraid to tell the story of what you do if you do it well, and don't leave it to others entirely to tell your story for you. That is, unless you would prefer to minimize your opportunity.

I know of a canner of tomatoes in a small town who packs one of the most solid, nicest packs I have ever seen. This man and his father before him have sold to a single jobbing outlet. This canner makes a living to be sure, but he has not made half the living possible, were he to have placed his really extraordinary pack where such is more deeply appreciated. It would be almost sacrilegious to suggest more aggressive sales policy to him, for the present packer's father, as I have said, knew the father of his present jobbing outlet. This canner is so steeped in this tradition that he will never be bigger than he is, though his available acreage, his history, and his pack each year, entitled him to a place in the sun which the limitations of his sales ability will forever forbid.

Why on earth doesn't the canner think more



# Should Buyers Read Labels On Food Products?

A decision of unusual interest to food purveyors was recently rendered by Judge Borquin of the United States District Court of Montana in the case of Royal Baking Powder Co., vs. Donohue, et al. The court after stating that the law (Food Law of Montana) prohibited and penalized misbranding, further said:

"It lays no command on the purchaser to scrupulously or at all read labels."

One might infer from this language that manufacturers and sellers of food products act at their peril so far as possible deception on the part of the buyer is concerned, even with a truthful label.

It would seem more logical to say that a manufacturer should be protected from charges of misbranding if his label truthfully describes the product, whether the buyer reads the label or not. Everyone knows that changes are occurring in the manufacture of food products the same as in any other article of commerce.

Various mixtures and compounds are found on the market today which furnish low-priced substitutes for some heretofore higher-priced standard article.

If a wholesome substitute can be marketed at a lower cost, it should not be prohibited by an unduly rigid construction of the law. True, the public shall be fully informed, and that is the province of the label. It is exceedingly illogical to say there is likely to be deception because many buyers do not read the labels, and the law does not require them to do so.

The purpose of the law, undoubtedly is to prevent the use of labels that are deceptive in design but accurate in fact. Armour and Company manufacture a number of so-called substitutes and endeavor to have their labels so fashioned and so worded that there can be no doubt of the fact that they are covering containers that hold substitutes. Armour and Company feel that the public has rights and their labels are all designed to help the public protect itself.

**ARMOUR AND COMPANY**  
**CHICAGO**

## CANNED SALMON

All Grades  
All Sizes

—  
Largest Distributors in the World  
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**KELLEY-CLARKE CO.**  
New York City      Seattle, Wash.



## PRICE'S VANILLA

Price's is the pure juice of the finest vanilla beans--aged in wood to give it a rich, mellow flavor. No substitute flavor nor artificial coloring in it!

**PRICE FLAVORING EXTRACT CO.**  
CHICAGO      In Business 66 Years      U. S. A.



creatively of his selling problem. Goodness knows he usually has three-quarters of the year in which to do it! The merchandising policies of this industry, considering the time the canner has to think, should be second to none. But when it comes to the old-fashioned, the hide-bound, chance aspect of custom and the altogether relatively unprofitable merchandising aspects of an industry that can actively manufacture during such a relatively small season in the year, one cannot but marvel at such inefficiencies in sales customs, and wonder why the industry as a whole is satisfied to suffer under the archaic shortcomings of its sales conditions. Here we have great food staples, sure in their ultimate consumption. Never did a field offer such real opportunity for better merchandising, and the creation of more profitable distributing customs.

#### Advertising Helps That Can Be Used

Many are the inexpensive dealer helps, envelope stuffers and other forms of advertising which do not run into big money, and which in the localized distribution of the average pack, can considerably influence the entire localities in which such packs are distributed. While this is not true of all canners by any means, nevertheless there are a lot of men in this audience in connection with whose packs I can imagine that a jobber's jaw would drop, and a retailer would be dumfounded, were the jobber's salesman to call on a retailer and be able to say: "I have 150 leaflets I would like to leave with you concerning this corn we are going to deliver to you, that you may distribute them among your

customers." The 150 leaflets might cost the canner 15 cents on a quantity run, and the local goodwill for his brand would be really greatly benefited. Suppose you publish a leaflet on your brand with the slogan: "Buy a case," suggesting that the consumer take advantage of the retailer's usual dozen discount. Many are the different miniature advertising campaigns that you gentlemen could project with great profit. I wish I had the time here to go into such. Many are the inexpensive ideas that you could adopt, by which you could stand out for both quality and service.

Your cannery may burn down, an earthquake may demolish it, but this sort of goodwill in consumer-demand cannot be annihilated.

To just the extent you achieve quality and service, to just the degree you align your business and sales policies with what exceptionally reaches and pleases, to just that degree will you enjoy consumer preference. The hit-or-miss platform in merchandising wins or loses in a hit-or-miss way. For, in all business, those whose sensibilities are steeped in self satisfaction or indifference, risk the rocks of shallow profits, if not failure. On the other hand, he who studies his every opportunity in consumer preference, and charts his course accordingly, reaches the profitable port of real merchandising success. He achieves the satisfaction that is born of recognition and reputation. He realizes the joy of well earned appreciation from those whom he sells, be it trade or consumer, because he has cooperatively sold, and intelligently served.

## Canners Ask for Tariff Reciprocity

A strong appeal for reciprocity between the United States and foreign countries was made by canners appearing before the House Ways and Means Committee during the consideration of Schedule G dealing with agricultural products. American producers, it was declared, are not getting a square deal in the South and Central American countries and in Australia and legislation permitting retaliation was advocated.

The opening plea was made by Preston McKinney of San Francisco on behalf of the Canners' League of California. He told the committee that in California last year 21,000,000 cases of goods were canned, the output being valued at \$125,000,000. There are employed in the industry 50,000 men and women and the product of 4,000 orchards is purchased. This is the second largest industry in California.

"We are not fearful of the normal competition of the outside world", he said, "but we do feel that the 20 per cent duty now on should remain for the reason that we must be prepared to meet unusual conditions. Last year the jam manufacturers of Australia were able to ship their product into the United States at ruinous prices and the duty was only 25c per dozen cans.

"If we were to ship our canned goods into Australia they would be dutiable at \$2.10," he declared.

The California canners are unable to do business at all in Central and South America because of the high duties that act as embargoes. He cited the case of one of the packers some time ago who shipped 2,000 cases to Argentina. The invoice price in San Francisco was \$6,800, but af-

ter paying the duty and freight the merchandise cost down there the sum of \$22,000, "yet," he said, "Argentina shipped in to the United States the same year enormous quantities of wool, hides and quebracho on which no duty at all was paid." Brazil shipped here \$160,000,000 worth of coffee, without any duty being exacted, while the duty is 50c gold per can on canned goods. From Central America came 30,000,000 bunches of bananas as duty free, while the duty on canned goods is 20c to 25c per can.

B. Housell, representing the canners of sardine and tuna fish in California, stated that this industry was established in the early part of the last century but was put out of business by foreign imports. The war stepped in and brought about a revival, with the result that there were forty-eight canneries between Santa Cruz and San Diego, valued at \$12,500,000, with more than 1,100 fishing boats, valued at \$5,500,000. There was produced and delivered last year more than 100,000 tons of fish, the fishermen receiving in excess of \$4,500,000. The value of the finished product was \$17,500,000.

The volume of the industry in Maine was outlired by R. J. Peacock, of the R. J. Peacock Canning Company of Lubec, Maine, who stated that there were 58 factories in operation in 1919 and that 2,500,000 cases of sardines were packed. Six thousand people were employed in the factories, five hundred men employed in delivering the fish to the factories and in addition there were between eight and nine thousand fishermen. These factories are largely located in small towns and provide support for large number of people.



## Wisconsin Cheese Must be Dated

Cheese manufactured in the State of Wisconsin must in the future be marked with the date of packing. The State Division of Markets has ruled that all cheese packed in the State or shipped unpacked must be marked and that cheese buyers cannot buy undated cheese in Wisconsin. The ruling follows:

"No cheese maker or operator of a cheese factory and no agent or servant of any such maker or operator shall pack for sale or ship for sale in this State or deliver for sale any whole milk American cheese made in Wisconsin unless such maker or operator by himself or by his agent or servant marks plainly and conspicuously upon each cheese in letters and numerals at least one-fourth of an inch in height the date when such cheese was removed from the press, the date of packing such cheese or, if shipped or delivered unpacked, the date of such shipment or delivery, the date of paraffining such cheese if it was paraffined by the maker or operator or by his agent or servant, and the serial number of the operator of the cheese factory as designated by the Division of Markets.

"No person, partnership, corporation or association engaged in the business of buying cheese from cheese makers or from operators of cheese factories or acting as agent to sell cheese for cheese makers or for operators of cheese factories shall receive for sale any whole milk American cheese made in Wisconsin unless such maker or operator by himself or by his agent or servant has

marked plainly and conspicuously upon such cheese in letters and numerals at least one-fourth of an inch in height the date when such cheese was removed from the press, the date of packing such cheese or, if shipped or delivered unpacked, the date of such shipment or delivery, the date of paraffining such cheese if it was paraffined by the maker or operator or by his agent or servant, and the serial number of the operator of the cheese factory as designated by the Division of Markets."

## Margarin Industry of Hull, England

In addition to being one of the most important British centers for the treatment of oilseeds and the production of various oils, paints and colors, Hull, England, is rapidly gaining a commanding position in the matter of the production of oleomargarine. This is practically a new industry for the district.

About four years ago the manufacture of compound lard was commenced, and this lard has now reached a degree of popularity that is securing for it universal use. It is generally admitted to have superseded hog lard in this district. The manufacture of margarin at Hull is a more recent development. Among the different brands produced are those intended for table use, for cake making and for pastry.

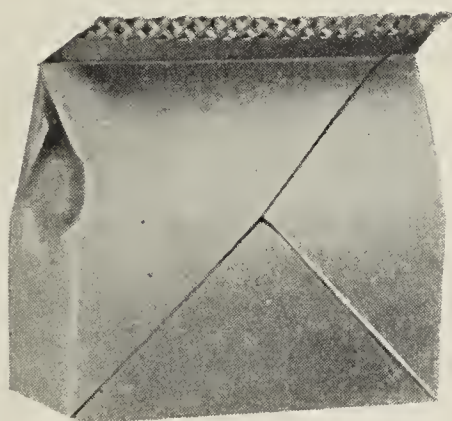
Annual production figures covering the margarin industry of the Hull consular district are at present very difficult to obtain, although it is expected that a report of an interesting character will be issued at the end of the year. However, in 1915, the weekly average

production of margarin in all England amounted to 2,200 tons, which was followed in 1916 by a weekly output of 2,500 tons. In 1917 the total had increased to 3,500 tons per week. In 1919 the industry made great advances, owing to the opening of new works throughout the country; the weekly production for January of that year averaged 7,500 tons, in February 6,200 tons, in March 6,400 tons, in April 6,350 tons, in May 8,500 tons, in June 6,000 tons, in July 6,000 tons, in August 4,800 tons, in September 6,350 tons, in October 5,950 tons, in November 7,500 tons, and in December 5,220 tons. From such information as is obtainable it would appear that for the year 1920 the average weekly production has been in the vicinity of 7,000 tons.

## Biscuit Trade in Dublin

The importance of the Irish biscuit industry can be appreciated by the fact during the war one Dublin establishment alone shipped 1,200,000 packets of biscuits weekly to the British forces. The same concern has found a growing market for its goods in the Philippines and Porto Rico, and recently it began shipments to the Virgin Islands.

According to a telegram received by the State Department from the United States Minister at Bangkok, the existing prohibition on the export of rice from Siam is to be lifted on January 1, 1921. During the first six months of the year the Siamese Government will permit the exportation of 400,000 tons of rice.



## The JELL-O Safety Bag

of waxed paper that incloses the Jell-O inside the Jell-O package affords absolute protection to the contents. It represents the last word of scientific, sanitary food protection which is demanded everywhere. Moisture is kept

out and flavor is kept in. Jell-O protected by the safety bag remains as pure and sweet as on the day it was made. In addition the making up of Jell-O is reduced to the simplest process. There is no fussing or fumbling about it.

THE GENESEE PURE FOOD COMPANY

Le Roy, New York

Bridgeburg, Ontario





## FOOD PRICES



### Study Costs

Many breakfasts cost you ten times  
Quaker Oats

Quaker Oats costs one cent per large dish.

You can serve 12 dishes of Quaker Oats for the cost of a single chop. Or five dishes for the cost of an egg.

Quaker Oats yields 1,810 calories per pound—the energy measure of food value. Round steak yields 890—eggs 635.

Quaker Oats is only 7 per cent water. In fish the waste and water are 85 per cent. In eggs they are 77 per cent.

Meat, eggs and fish will average nine times Quaker Oats in cost, for equal calories of nutriment. That means 85 cts. on a breakfast for five, or \$125 per year.

### Oats—the supreme food

Yet the oat is the greatest food that grows. It is almost a complete food—nearly the ideal food. As a body builder and a vim-food it has age-old fame. It is the best food you can serve to start the day.

#### Calories per pound

Quaker	1810
Round Steak	890
Average Fish	350
Potatoes	295
Canned Peas	235

Millions of people nowadays make Quaker Oats their basic breakfast. They save immensely on their food cost. They guard against under-feeding. The breakfasts are delicious. Then they use the saving to buy costlier foods for dinner.

## Quaker Oats

The finest oat dish created

Oat lovers the world over get Quaker Oats for flavor. This brand is flaked from queen grains only—just the rich, plump, flavory oats. We get but ten rounds from a bushel. Yet this extra flavor costs no extra price. Ask for Quaker and you get it.

Packed in sealed round packages with removable cover



### Amy Smith says:

"I find Moxley's Margarine gives excellent results in cooking, having tested it on corn bread, biscuits and cakes."

"I have also served it for table use and think only an expert could detect it from a good grade of butter."

Amy Smith is the head of the Cookery Department of the great woman's magazine, "Today's Housewife."

Dixie Margarine is pasteurized into purity in every ingredient.

Created by  
Wm. J. Moxley Inc.  
CHICAGO

## SOMETHING NEW

Samples Gratis

### GRANULATED BORIC ACID

Will dissolve more readily than any form hitherto introduced  
• • When ordering, specify • •

20 Mule Team Granulated Boric Acid  
U. S. P.

Pacific Coast Borax Company  
New York Chicago San Francisco



# NEWS OF THE FOOD TRADES

## Meat Products Below Pre-War Price Levels

### Thomas E. Wilson Says Readjustment in Packing Industry is Complete

In response to a request from the Institute of American Meat Packers, for an official expression concerning the situation and general outlook of the packing industry, Thomas E. Wilson, president of the institute, made the following statement:

"The readjustment of values within the last few months, so pronounced in practically all commodities, has been under way with the meat packer and live-stock producer for about a year, with the result that prices today for the live animal, its meat and by-products are on a pre-war level, and in many instances, such as hides, wool and some other by-products, below the level prevailing previous to 1914.

#### Foreign Countries Unable to Buy

"The inability of foreign countries to buy and pay for our products in any considerable quantity has had a deterrent effect on the volume of business, particularly since the armistice. This circumstance has been combined with practically no demand for important by-products, such as hides, wool, sheep skins, etc., for nearly a year. This lack of demand has been chargeable, no doubt, to the fact that manufacturers of these raw materials, foreseeing readjustment in prices, determined to dispose of raw materials before taking on a new supply and thereby establishing a lower level. In other words, foreseeing the inevitable results, manufacturers and retailers have been endeavoring to go through the period of readjustment with the least possible loss.

"The meat-packing business was the first to feel the effects of changed conditions and was well on its way toward readjustment before pressure was felt by other lines.

"Looking beyond the period of financial and industrial transition, which all indications point to being one of the shortest and most orderly following a great world-wide disturbance. I can see many reasons for optimism as to the future. The highest authorities in financial affairs agree that credit conditions of the country are fundamentally sound. The national banks of the country have grown approximately as much during the last six years as in fifty years previously deposits increasing about \$7,000,000,000 in the last nine years.

#### Credit Now Being Provided

"A comprehensive movement is well under way, backed by a large percentage of the banking power of the country, as well as most of the large business institutions, to provide millions of credit to finance exports to foreign countries, which should in due time apply the needed remedy to enable the principal war stricken countries to resume trade with us.

"The United States merchant marine

now commands a gross tonnage of 14,525,000, compared with 4,287,000 gross tons in 1914, giving us the second largest merchant marine in the world, thereby insuring that when proper financial relief is given a free movement of American products in American ships will result.

"Railroads of the country are rapidly recovering from the wartime strain, and service at the present time, generally speaking, is almost normal and in most respects satisfactory and capable of moving the nation's commerce. It can be said to the credit of labor that evidence is already being furnished of its disposition to buckle down and increase production with the minimum labor expense, and labor's attitude generally, I think, can be relied upon to do its share in bringing about normal conditions.

"What we now most need is to recover from the spirit of pessimism and realize the great strength in the resources of our country."

## To Hold "Eat-More-Meat" Conference February 11

A second conference of producers, meat packers, and commission men from the various sections of the United States, called to consider ways and means of promoting an increased consumption of meat, will be held on February 11, at the Saddle and Sirloin Club, Union Stock Yards, Chicago. At the first conference, held on December 2, at Chicago, an organization committee was appointed to enlist in the movement every live stock association in the country, all live stock exchanges and the entire packing industry.

The committee, national in its representation, includes W. J. Carmichael, secretary of the National Swine Growers' Association, chairman; Thomas E. Wilson, president of the Institute of American Meat Packers; J. R. Howard, president of the American Farm Bureau Federation; E. C. Brown, president of the National Live Stock Exchange; Edward Morris, president of Morris & Company, and F. Edson White, vice president of Armour & Company, both representing the Institute of American Meat Packers; Prof. John M. Evvard of Iowa State College; L. C. Reese of Prescott, Iowa, a prominent live stock producer and a member of the Iowa State Live Stock Commission; S. B. Stafford, president of the Chicago Live Stock Exchange; Frank D. Tomson, editor of "Shorthorn in America," and C. B. Heinemann, secretary of the Institute of American Meat Packers.

A definite plan of action, proposed at the first conference, will be considered at the meeting on February 11. This plan provides for a national Live Stock and Meat Council to be composed of 33 members representing producers, packers, live stock exchanges, stock yards and allied interests. The plan also provides for a central working committee of three members to have direct charge of activities.

## Two Meat Packing Companies Merged

### Acme and Indian Concerns Become One--C. E. Martin President

Announcement is made of the consolidation of Indian Packing Corporation and Acme Packing Company. The consolidated organization will be known as Acme Packing Company.

The combination of these two strong factors in the meat-canning industry into one company is expected to accomplish the annual saving of at least \$1,000,000 in costs of operation, management, selling and advertising.

#### C. E. Martin is President

The new corporation will be headed by C. E. Martin, president and organizer of Acme Packing Company, who is responsible not alone for the success attained by the Acme Packing Company in the canned meat business, but for the bringing about of the consolidation. Mr. Martin, with very small capital and under the greatest of handicaps established, in 1909, the Acme Packing Company and developed the business to the position of a dominant factor in its field.

The Indian Packing Corporation was organized under the laws of Delaware, July 22, 1919, and has been known as a large and very aggressive advertiser of "Council Brand" canned meats and other canned food products and has large and thoroughly modern packing plants at Green Bay, Wis., Providence, R. I., and Greenwood, Ind.

The Acme Packing Company's plants are located in Chicago and branches are maintained throughout the country.

#### The New Officers

Virtually the entire organization of the Indian Packing Corporation retires, with the exception of John M. Clair, secretary, who is to become one of the vice presidents of the new corporation. The other officers will be C. E. Martin, president; Meyer Katz, vice president; A. C. Tolde, secretary and treasurer, all of whom have held the same offices with the Acme organization. The new Acme Packing Company will have a capitalization of \$12,000,000—all common stock, and will have a charter from the State of Illinois.

In addition to canned meats the company packs jellies, jams, preserves, pork and beans, vegetables, California fruits and other products. Both of the well known brands—Red Crown and Council—will be continued by the new corporation.

## Restoration of Bolivian Duty on Foodstuffs

A cablegram from Consul W. D. Brown at La Paz, received January 12, 1921, states that the remission of the import duty on foodstuffs has been repealed except on these commodities coming into the Amazon Departments.



## Trademark Rights Upheld by Court.

### Decision in Kellogg Case in Michigan--Controversy Long Drawn Out

The long drawn-out litigation between Dr. John H. Kellogg, of the Battle Creek Sanitarium, and his brother, Will K. Kellogg, of the Kellogg Toasted Corn Flake Company, involving the use of the name "Kellogg" as a trademark, has finally come to an end with the decision of the Supreme Court of the State of Michigan. In one form or another the case has been before the courts since 1908, and its complexities are almost endless. As stated in the Supreme Court's opinion: "We have spent weeks in the examination of the immense record, the numerous exhibits, and the lengthy briefs in the case. It would be idle to attempt to set out in this opinion even an abstract of the pleadings or evidence within any reasonable limit."

It is quite impossible to go into the history of the case, which may have an important influence upon future rulings in family name disputes. Suffice it to say that in this case the principals were both clearly entitled to the name "Kellogg" as a family name, that they were for a time associated together in business, and since that day have been engaged in businesses which are in competition at certain points. None the less, the opinion of the Michigan Court goes farther than most courts have been willing to go in restricting the use of the family name. The following are the facts and rules of law upon which the Kellogg Toasted Corn Flake Company relied, and which were sustained by the court:

"First Fact: Appellee Corn Flake Co. first adopted, advertised and registered the trade-mark 'Kellogg's'."

"First Rule of Law: The trade-mark or trade-name is the property of those who made it valuable, and its use by others than those who earned a reputation thereunder would be a fraud upon the public."

"Second Fact: Dr. Kellogg participated in, and made large profits and capital returns from the adoption, commercialization and wide advertising of the trade-mark 'Kellogg's' by appellee Corn Flake Co."

"Second Rule of Law: One who participates in and profits by the adoption of a trade-mark is estopped to injure or appropriate it."

"Third Fact: Appellee Corn Flake Co. never at any time, by the 1911 contract, or otherwise, transferred to Dr. Kellogg or his company any business or any right to use, infringe or trail on its registered trade-mark 'Kellogg's,' and appellants do not claim that any such right was ever granted to or settled upon them."

"Third Rule of Law: A trade-mark cannot exist as an extrinsic thing and cannot be licensed apart from the business in which it is used. Appellee Corn Flake Co., even if it had desired to do so, could not have transferred, granted or otherwise alienated any right of Dr. Kellogg to defraud and deceive the public by trailing spurious products on its registered trade-mark, and Dr. Kellogg

had no such right as an extrinsic thing, and could grant no such right to the Kellogg Food Company."

"Fourth Fact: Appellants are trailing their Kellogg's Bran and other Kellogg's products on the trade-mark, advertising, good-will, trade guarantees, selling helps, name and reputation of appellee Corn Flake Co. by deceiving and confusing the trade and public."

"Fourth Rule of Law: Equity will not permit a rival manufacturer to trail his different products on the established trade-mark and reputation of another."

### Peanuts Largest Industry In Shantung

The production of peanuts in the province of Shantung, China, is by far the most important industry of that region, according to the American consul at Tsinanfu. The Shantung nut is reported to be the best in China on account of its greater oil content. In the absence of official statistics, an approximate estimate of the production of peanuts in Shantung is 300,000 long tons annually. In 1919 the crop was short about 26 per cent, owing to drought in certain sections.

Until the outbreak of the European War, the bulk of the Shantung peanut trade was in the hands of German merchants at Tsinanfu and Tsingtau. Since the Japanese occupation of Tsingtau and of the Shantung Railway, the business has passed largely into Japanese hands. The United States is now probably the largest buyer of Chinese peanuts. For some years there was a heavy export of peanuts in the shell, but recently the nut has been exported shelled. The oil was originally extracted by native methods only, but modern oil mills have been erected at Tsingtau, and plans for other mills are understood to be under consideration.

Customs statistics for the port of Tsingtau show that the exports of peanuts in the shell during the prewar year of 1913 were 15,317,120 lbs.; the exports of shelled peanuts the same year were 90,036,080 lbs., and of peanut oil 19,615,480 lbs. In 1918 the exports of peanuts in the shell dropped to 17,920 lbs., while the exports of shelled peanuts and peanut oil decreased to 54,768,000 lbs. and 45,736,320 lbs., respectively. These decreases are no doubt directly due to the shortage of shipping facilities on the Pacific. In 1919 the exports of peanuts in the shell increased to 82,880 lbs. and exports of shelled peanuts and peanut oil increased to 137,345,600 lbs. and 94,803,520 lbs., respectively. Also considerable quantities of peanuts pass north and south on the Tientsin-Pukow Railway, to Pukow (Nanking) and Shanghai, and Tientsin, for export.

#### Chinese Peanut Crop for 1920

The quality of the Chinese peanut crop for 1920 is better than in 1919, as is also the quantity. It is estimated that the entire crop of shelled peanuts in the Provinces of Shantung, Honan, Chihli and Hupeh, and in Manchuria, which comprise the chief peanut belts of China, will be about 400,000 tons. From this crop, it is computed that there will be an exportable surplus of about 120,000 tons of shelled peanuts and about 84,000 tons of peanut oil. No figures are obtainable for unshelled peanuts.

## Suggest Cooperation to Lower Food Costs

Reduction in cost of food distribution in this country is possible only through organization of more cooperative marketing associations, the standardization of products and the improvement of transportation, storage and terminal facilities, according to a statement today by Dr. Eugene H. Porter, State Commissioner of Foods and Markets, telling of the conclusions reached by the National Association of State Marketing Officials at its recent convention in Chicago.

More adequate financing of farm and marketing operations was also pointed to as a vital need in the present situation. Other remedies touched upon in the report are the licensing of commission men and cold storage warehouses in every state and the organization of consumers' cooperative associations. Greater economy was also demanded in the distribution of all foodstuffs as necessary to eliminate waste and to benefit producer and consumer.

Reports adopted by the association emphasize the necessity for more extensive investigation as to the cost of distribution of food commodities from the point of production to the consumer's kitchen. A plan was approved for wider distribution of market information through newspapers and telegraph and wireless information centers. Beginning next month the wireless will be used by the Federal Bureau for the transmission of market information.

Officers were elected by the national association as follows:

L. G. Foster of Wisconsin—President.

Daniel C. Rogers, Missouri—Treasurer.

W. A. Munson, Massachusetts, Secretary.

These three officers compose the executive committee with Dr. Eugene H. Porter of New York, the retiring president, and George Livingston, director of the United States Bureau of Markets.

### Wisconsin Pea Cannerys Cooperate Under Export Law

According to the annual report filed by the Wisconsin Cannery Export Association with the Federal Trade Commission under the Export Trade Act (Webb-Pomerene law) thirty-five canning companies are cooperating under the law in the export trade of canned peas. The members of the export association are all cannerys of vegetables in Wisconsin, who prorate the expense of selling their products under a common label in foreign countries. The officers of the association are: A. Lau, Waukesha, Wis., president; and L. E. Wedertz, Manitowoc, Wis., secretary and treasurer. The export association was organized in March, 1919. According to the latest statistics available, a total of 12,317,000 cases, of 24 cans each, of peas were canned in the United States during the year 1920. Wisconsin and New York supply over one-half of the total. Ten years ago the total number of cases of peas packed in the United States amounted to 4,347,000 cases.

The thirty-third annual meeting of the New York Wholesale Grocers Association will be held February 16 and 17 at the Hotel Astor, New York.







## Big Reduction in Imported Tea Rejection

The rejections of tea offered for import were smaller for the last fiscal year than for any of the seven preceding years, according to the annual report of George F. Mitchell, Supervising Tea Examiner, United States Department of Agriculture. The total rejections amounted to only 145,246 pounds, of which 1,592 pounds was barred because of impurities chiefly due to artificial color. The remaining 143,654 pounds was not equal to the Government standards of quality.

The rejections amounted to only 0.15 per cent of the 96,868,858 pounds of tea imported during the year. Although the amount imported was smaller than for any year since 1915, this does not, in the opinion of the Supervising Tea Examiner, necessarily indicate any decrease in consumption of tea in the United States. It is more likely due to the fact that during the war importations of tea were above normal in anticipation of possible embargoes or import duties on tea. Large quantities were carried over into 1920 from the previous year.

According to the report of the Tea Examiner, the low percentage of rejections for the year was due to several causes, the most important being that little, if any, teas that were intended for manufacturing purposes were entered for human consumption.

In former years, such teas frequently were entered for human consumption with the hope that they would pass the Government inspection and thereby escape the 1 per cent tax placed on teas for manufacturing purposes. It was estimated that 65 per cent of the rejections for the fiscal year 1919 were teas that should have been entered for manufacturing purposes in the beginning, and that were so entered after having been rejected as unsuitable for human consumption.

The kinds of teas imported during the last fiscal year were as follows:

Green, 34,756,779 lbs.; Oolong, 15,390,546 lbs.; Black, 46,715,530 lbs.; Total, 96,862,858 lbs.

The teas came from the following countries: Ceylon and India, 38,609,142 lbs.; China, 12,985,490 lbs.; Japan and Formosa, 39,134,952 lbs.; Dutch West Indies (Java and Sumatra), 6,133,274 lbs.

The report of the Supervising Examiner was issued by the Treasury Department, since the work was formerly performed under the supervision of that Department. On July 1, 1920, the Tea Inspection Service and the staff of tea examiners were transferred to the Department of Agriculture. Copies of the report of the Supervising Tea Examiner can be obtained upon application to the Bureau of Chemistry, Washington, D. C.

### New Bakery Company for Baltimore

Gardner Bakeries Company, Inc., with a capital stock of \$1,500,000 has been incorporated to engage in a general baking business, to deal in confections and prepared breakfast foods in Baltimore, Md., and elsewhere. The subscribers to the incorporation act, as filed with the State Tax Commission, are Wade A. Gardner, Louis A. Schillinger and Carlyle Barton, all of Baltimore. Louis A. Schillinger is named as resident agent.

## PERSONALS

### New Food Commissioner For Oregon



C. L. Hawley, New Food Commissioner of Oregon

On January 1 the office of dairy and food commissioner of Oregon was filled by C. L. Hawley, who was elected at the general election in November. Mr. Hawley succeeds J. D. Mickle, who has administered the office for eight years. Mr. Mickle declined to serve another term, hence Mr. Hawley's selection as a candidate. Mr. Hawley is a successful farmer, dairyman and breeder of registered Guernsey cattle and Lincoln sheep. He is a member of the board of regents of the Oregon Agricultural College, a position he has filled for many years. He also served two terms as State Senator and in many ways has been closely identified with the development of the State.

W. B. Cragin, Jr., has resigned from the Borden Condensed Milk Co., to become sales manager for B. T. Babbitt, the soap concern. Mr. Cragin has had wide experience in the specialty sales field. He started when eighteen years old as a salesman for the Mohawk Condensed Milk Company, where he worked himself up to metropolitan sales manager and later Eastern sales manager. When the company was taken over by Borden Mr. Cragin was made assistant general sales manager of the latter company. Mr. Cragin is the son of W. B. Cragin, for many years Eastern manager for Armour & Company, and one of his brothers is export sales manager of the wholesale grocery firm of R. C. Williams & Company.

George P. McCabe and Charles J. Tressler, attorneys who are well known in the food trades, have formed a law partnership under the firm name of McCabe & Tressler, with offices at 111 West Monroe Street, Chicago. Mr. McCabe was solicitor of the Department of Ag-

riculture under Presidents Roosevelt and Taft, when the pure food and meat inspection acts were passed. Mr. Tressler was formerly assistant general attorney for Swift & Company. He will devote his time to corporation matters and general practice, while Mr. McCabe will continue to specialize in food and drug matters.

Donald Mason, son of Fred Mason, president of the Shredded Wheat Company, Niagara Falls, N. Y., has been admitted to partnership in the Milton-Rich Company, food broker, New York City. Milton Rich recently withdrew from the company to become New York sales manager for the Armour Grain Company. Donald Mason has served several years in the sales field with various branch houses of the Shredded Wheat Company.

### Campbell Company Buys Factory in Indiana

Plans for the establishment of a big new Western plant by the Joseph Campbell Company, of Camden, N. J., have been announced. The soup firm recently bought the Reid, Murdoch & Company plant at Hammond, Ind., comprising eleven manufacturing buildings on a sixteen-acre tract, with 350,000 square feet of floor space.

The site was formerly the home of one of Hammond's first manufacturing plants, the Chicago Nail Mill Company. Some Hammond business men later paid Reid, Murdoch & Company a \$20,000 bonus to establish its plant there. The company rebuilt the old nail plant and added several buildings.

The new owners will remodel the present buildings to suit their needs, but future plans call for a set of six-story concrete and steel buildings along two sides of the present factory.

In announcing the acquisition of their new property, the Campbell company further states that it is planning, for the future, another factory in Canada and still another in California. This Hammond plant is merely a first move in forging a chain of Campbell plants across the continent.

The problem of getting sufficient raw materials has become of increasing embarrassment to the company. The desirability of tapping new sources of supplies of fresh vegetables, sources in widely separated localities, so as to be less affected by local crop failures, has become obvious.

Hammond is well located for this purpose. The soil to the south of Lake Michigan is particularly qualified for the growing of tomatoes, carrots, celery and other garden truck, which the company requires in such large quantities. The farmers who have settled there, largely of Northern European extraction, are skilled in the raising of these vegetables.

Chicago is the principal source of meat supply, and the Campbell company has long been one of the largest users of meats in the United States. The pea beans used in the manufacture of pork and beans are grown in Michigan. The proximity to these sources of supply is a further advantage possessed by the Hammond location.



# NUCOA



The sun never sets on Nucoa sales. It is sold from San Francisco to Antwerp. It will encircle the globe. It must. It repeats.

**THE NUCOA BUTTER COMPANY**

*New York*

*Chicago*

*San Francisco*

**BUTTERS BREAD — STAYS SWEET**

Every Kind of

## WARD'S

FAR FAMED

### BREAD AND CAKES

is the finished and perfected result of skill, science, experience, and the use of highest grade materials.

**WARD BAKING COMPANY**

New York  
Brooklyn

Pittsburgh  
Boston

Providence  
Chicago

Cleveland  
Baltimore



## Raisin Company To Open Branch Houses

### California Concern Announces That the Broker Will be Eliminated June 1

An announcement of interest to the food trade has been made by President Wylie M. Giffen of the California Associated Raisin Co., Fresno, Cal., that after June 1 the company will sell through its own branch houses, thus eliminating the broker. At the same time Mr. Giffen denies reports that the wholesale grocer will be eliminated. A letter which Mr. Giffen has sent to the jobbing trade is as follows:

"The personnel of these offices will consist of a sales manager, under whose direction a number of specialty men will work in the surrounding territory. We have considered this change very carefully for more than a year and are now making it, believing that it is not only to the advantage of ourselves, but both to the wholesale and retail trade. Our brokers, in most cases, have rendered us a splendid service, but in the very nature of things they cannot render to us the service of men who are devoting all of their time to, and whose sole purpose in life is the selling of more "Sun-Maid" raisins.

"With the changing economic conditions, plus the fact that we expect the production of raisins to double in the next ten years, makes the problem of merchandising our goods a tremendous one, and we are making this change, not because we believe we can save money by doing so, but, even though it costs us more money, we can sell more raisins, and if we are right in this conclusion the advantage will not only be to ourselves but to both the wholesale and retail trade.

"The New York trade journals have given wide publicity to the statement that this is but a step toward the elimination of the wholesale jobber and a 'direct to the retail trade' method of merchandising. Of this we wish to most emphatically disabuse your minds. Years ago we gave the question of direct selling a great deal of thought with the conclusion that you, as jobbers, were rendering us a service that we could not begin to duplicate for the amount of your profits, and we still believe this to be true.

"It is, therefore, not our purpose to attempt to eliminate you in the handling of our product, but, on the other hand, we believe it will be possible through the new plan to work closer with you than ever before, and it is our ambition to so conduct ourselves that we may merit your good will and may have your cooperation in the marketing of our crops to even a greater degree in the future than in the past, and in announcing this change we do so feeling sure that it will be not only to our advantage but to yours also.

"We are an organization of producers organized because as individuals we sold our crops year after year for less than the cost of production, and the only justification for our organization now is that we may sell our crops for something in excess of what it costs to produce them. And in spite of the criti-

cisms of those who misunderstand or misjudge us, our sole purpose is that we may sell more raisins at a price that will show a reasonable profit to every one who as producers or distributors renders the industry a legitimate service, and we count you among that number."

The raisin company will establish fifteen district offices, each under a district manager. Thirteen sub-offices will be opened, with fifty-eight resident salesmen, and in addition to these forces a corps of specialty men will be maintained, sufficient in number to fully cover the trade throughout the country.

### Raisin Sales Managers Appointed

The California Associated Raisin Company, Fresno, Calif., has appointed several of the district managers, who will hereafter have charge of its sales. Announcement of the following appointments has been made by Stanley Q. Grady, sales manager:

New York—F. W. Delaney.

Chicago—J. M. Hill.

Denver—E. M. Walker.

Atlanta—W. R. Odom.

Kansas City—D. H. Hewett.

Portland, Ore.—Frank Kemp.

Houston—L. I. Stock.

As Mr. Grady was formerly sales manager of the Lipton Tea Company, it is natural to expect that some of his old associates might follow him into the raisin business, and such is the case, although a number of Associated men have been retained. Mr. Delaney, who will have charge of New York and the metropolitan section, was formerly in charge of the canned food department of the Cudahy Packing Company and was located in Chicago. Mr. Walker, in Denver, was formerly in that market representing the Lipton Tea Company. Mr. Odom was formerly the credit man for the Associated located in its principal offices in Fresno and he is credited with having had much experience in other departments. Mr. Hewett was field representative of the Associated in the Kansas City territory, where he will remain. Mr. Stock was also a field representative in the Fresno district. The other appointees are not known in this market.

What the Associated will do as regards Boston, Philadelphia and other markets is not known, but it is expected that definite announcement as regards those cities will be made shortly.

The newly appointed sales managers are now on their way to their respective posts of duty, after having spent week in Fresno in consultation with the officers of the Associated. They were taken over the company's plants and were given a chance to study the raisin business from the production end.

### California Raisin Sales, \$50,000,000

Approximately \$50,000,000 was realized from the sale of the 1919 crop of California raisins, according to the annual financial statement just released by the California Associated Raisin Company, which controls almost the entire acreage devoted to the industry in the state. Of the total crop of 182,591 tons produced that year, the association handled 159,260 tons, bringing a sales return of \$43,280,254.41.

## To Help Business Men Use New Discoveries

Commercial and industrial concerns will be helped to apply new processes and discoveries of chemists in the United States Department of Agriculture by an official of Development Work, just created by the Secretary of Agriculture in the Bureau of Chemistry.

The staff of the new service will be made up of engineers rather than chemists. David J. Price, chief engineer in the dust-explosion investigations conducted by the department, will be in charge of the new work.

Dr. Carl L. Alsberg, Chief of the Bureau of Chemistry, in a letter to the secretary stated that such a service is urgently needed to translate the work of the bureau into terms that could be understood and applied by the manufacturer and investor. Every year valuable discoveries are made concerning the utilization of manufacturing waste, or a new food is found, or a new dye, glue, or preservative. Without the service of a business office such as is now provided the value of these discoveries is greatly reduced through the discoverer's inability to present his proposition in terms which the business man can understand, and the public runs the risk of losing a much-needed material. Under the new organization the engineers will look after the product as soon as it has passed beyond an experimental or laboratory stage and will prepare estimates for the convenience of the manufacturers.

Mr. Price and his associates will furnish data upon raw material supply, cost of production and the uses to which the product is adapted—in short, they provide an unbiased practical prospectus to show the public exactly what may be expected from the new material or process on a quantity-production scale. It is believed this cooperation will develop many neglected sources of public and private profit.

## Italy Wants to Sell Us Macaroni

The recent order issued by the Italian Government permitting the exportation of whole semola macaroni against the importation of an equal amount of wheat seems to indicate that efforts are about to be made to reestablish the macaroni trade with the United States, according to a statement issued by The Italian Discount & Trust Company of New York. Since 1914 the scarcity of Italian macaroni in the United States has afforded American manufacturers an opportunity which they have eagerly seized. The building of large factories, the naturally increased production, and the betterment of the quality of American-made macaroni have all contributed to make more difficult the re-entry of the Italian products.

Prior to the war, Naples exported 60 per cent of the macaroni shipped from Italy, with Genoa and Catania furnishing the greater part of the remainder.

The United States and the British colonies were the most important markets for the Naples product. In 1913, the export trade in Italian macaroni reached a total of 154,000,000 pounds, about 7,000,000 boxes, of which the American market absorbed about 5,000,000 boxes.



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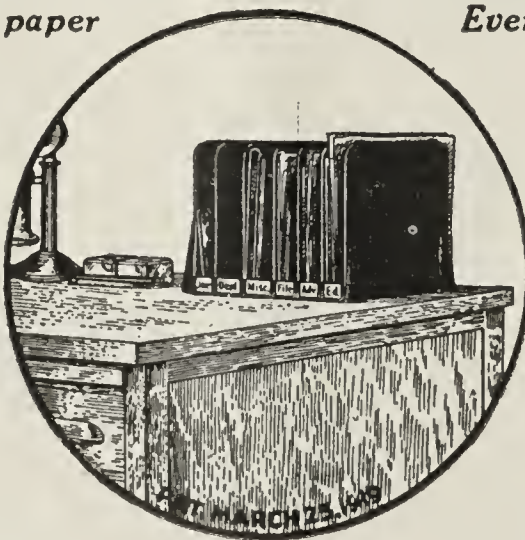
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## Notice to Manufacturers and Food Distributors

**W**E shall be glad to furnish you with specific information regarding the value of our circulation for developing new business for you and strengthening your present markets. The American Food Journal is making for itself a unique place in the economic structure of food manufacture and distribution, and we are confident it will be to your advantage to be with us.

There will be no obligation connected with your inquiry, but we do seek opportunity of explaining our plans and pointing out just how we hope to serve you.

The Publisher



## To the Readers of The American Food Journal

**T**HE SUBSCRIPTION price of The American Food Journal has been advanced from \$2.50 to \$3.00 per year.

The scope of the publication is being broadened to embrace the interests of all those concerned with the scientific and practical problems of food manufacture and distribution. In addition we shall continue to serve with ever-increasing fidelity the interests of food officials, domestic science experts and others who are concerned with the various phases of scientific food subjects.

Important editorial plans under way will assure our readers a publication each month that will truly justify the term, "The National Magazine of the Food Trades."

**This Offer Expires March 1, 1921**

We want to give opportunity to our present readers, whether regular subscribers or not, full advantage of the old rate.

For a limited period, therefore, we will accept subscriptions at \$2.50 for one year or \$5.00 for two years. In the case of present subscribers, their present subscriptions will be extended from the date of expiration for the desired period, but in no event for more than two years at the old rate. (To those who are not subscribers we offer a Special Trial Subscription of six months for One Dollar.)

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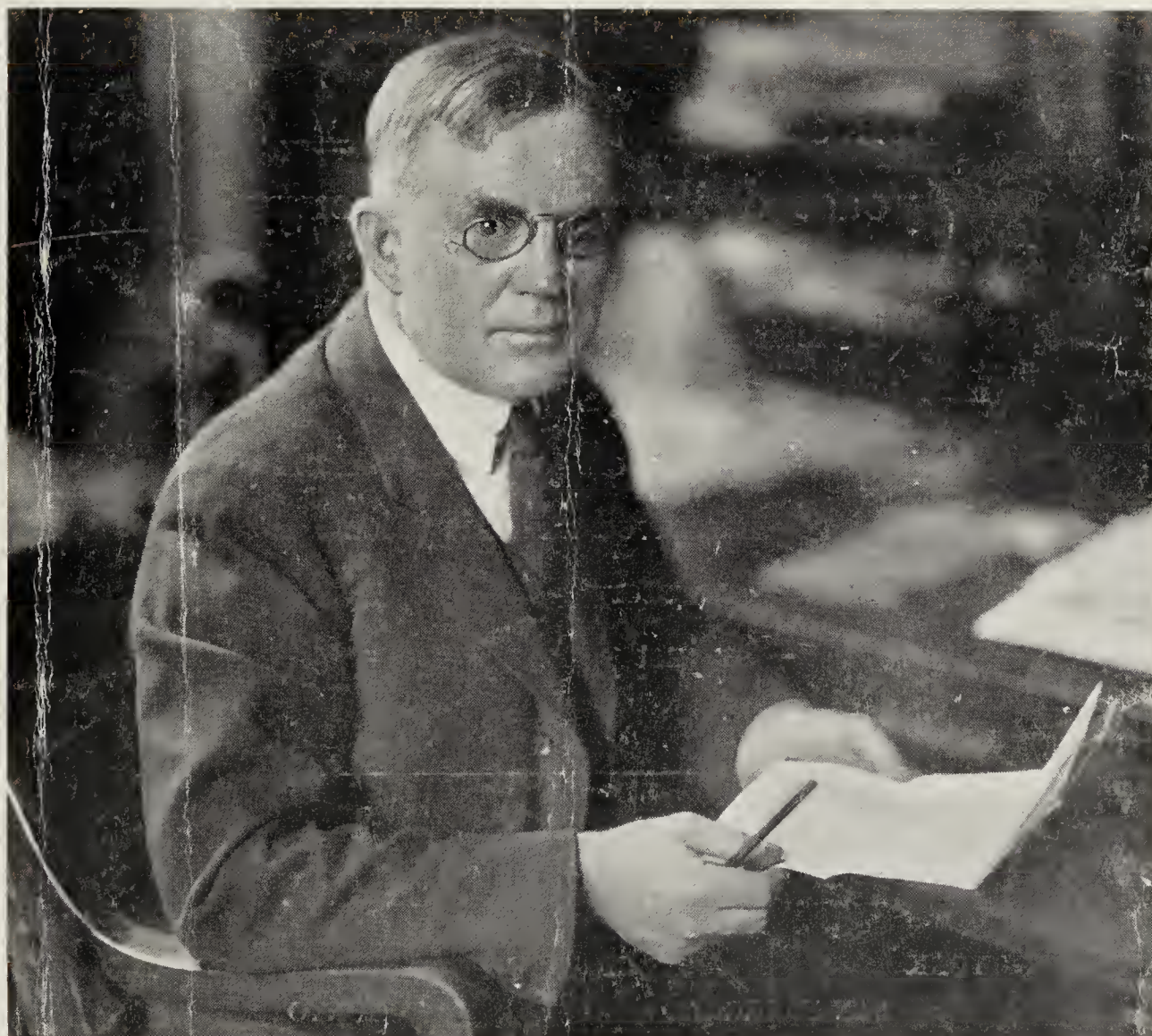


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# The American Food Journal

The National Magazine of the Food Trades



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# The American Food Journal

The National Magazine of the Food Trades

Published Monthly by

The American Food Journal, Inc.

25 East Twenty-sixth Street, New York

J. T. Emery, President

## The Editor's Column

### FOOD LEGISLATION

One of the regular departments of THE AMERICAN FOOD JOURNAL, beginning with this issue, is headed "Food Legislation." In this department will be chronicled each month the new laws that are introduced or acted upon by legislative bodies, pertaining to the manufacture or sale of food products.

### DIRECT MARKETING

The address by Dr. Lewis H. Haney, Director of the Bureau of Business Research of New York University, on direct marketing of food products, delivered before the New York State wholesale grocers, is published in full in this issue. It throws an interesting side-light on the plan recently adopted by the Procter & Gamble Company of eliminating the wholesale grocer. We also call attention to the editorial comment on this subject, page 22.

### NEW FOOD PLANTS

It shall be the aim of the editors to publish illustrated descriptions of new plants for the manufacture of food products. An interesting new process is that of the Keystone Instant Food Company, Danbury, Conn., which is described and illustrated in this issue. Descriptions of other new plants will be published in subsequent issues.

### ARTICLES ON MARKETING CAMPAIGNS

William Cruger Cushman, consultant in marketing problems for food products, has prepared a series of articles on this phase of the food manufacturer's problem, the first of which will appear in the March issue of THE AMERICAN FOOD JOURNAL. Every sales manager, every advertising agency and every wholesale grocer or broker should read this article with much interest.

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# The American Food Journal

The National Magazine of the Food Trades

Vol. XVI

FEBRUARY, 1921

No. 2

## Science and Our Food Supply

### Progress Made in Bacteriology of Canned Goods Now Fully Protects Consumer

BY WALTER J. SEARS

UNIVERSITY OF ILLINOIS  
LIBRARY-CHEMISTRY

THE science of bacteriology brought to the world the astonishing information that practically all food materials were subject to the attack of certain bacterial growth, resulting in decay, fermentation or putrefaction. Frequently some of the toxins produced by these bacteria were extremely harmful to human life.

This discovery raised for civilized man two very important and necessary obligations. First—wherever possible to destroy these enemies of health and life in all food materials before such materials were used as human food. Second—to discover and apply antioxins whenever the first precautionary measures had failed and some human being became the victim of bacterial poison.

Out of this new knowledge there has been developed another comparatively new science, very properly called the science of sanitation. This science lays down the measures which are necessary to prevent the growth and spread of the germ life which threatens human life. It is in fact a part of preventive medicine. Its formulae are as simple as they are commanding.

Number one says, keep things clean.

Number two exclaims, use hot water or hot steam.

These formulae have grown out of the discoveries—that the chief remedies for these harmful germs is to prevent them from attacking food material and that the outstanding agent for their destruction is heat. Of course it is true that other agents will destroy them but the one harmless agent, harmless alike to the human being and to the food material being treated, is heat either in the form of water or steam.

I fear I do not have the time to relate the romantic story of the discovery of these germs, the successful analysis of their nature and the creation of the agents which destroy them, but the investigations of such men as Koch, Pasteur, Lister, Smith, Wood, Flexner, Meyer, Dickson, Jordan, Funk and others, form a chapter in the history of science, perhaps the most important in the effort to conserve human life. We get some conceptions of the value of these

investigations when we realize that such dreadful diseases as typhoid and typhus fever, yellow fever, bubonic plague, sleeping sickness, infantile paralysis and others have been largely controlled and exterminated by these investigations.

#### Importance of Service of Nutrition

There is another comparatively new science whose discoveries are to have an increasingly important effect upon the preparation and consumption of human foods. I refer to the science of nutrition whose latest investigations have revealed that in addition to the essential elements which analytical chemistry has revealed, such as proteins, fats and carbohydrates, there are at least three other elements necessary to the growth of life forces. These elements have been improperly called vitamins. These are found chiefly in milk products, eggs, leaves of plants, seeds, tubers and roots. It has been found that certain diseases such as beriberi, scurvy and pellagra are due to deficiencies in the human diet.

These suggestions open up a wonderful field for thought and study. I regret that I have time to make only suggestions, but the work that is now being done in a practical way in our schools and colleges in the fields of home economics, is sure to give us entirely new standards in the selection and preparation of our foods. In this connection Dr. Raymond Pearl of Johns Hopkins University has very logically set forth the proposition that the time is coming when the world will grow and conserve its food supply on the basis of its nutritive value, that is, its real value to the maintenance of human life.

Of one thing we are reasonably certain that the wide-spread custom of American families of preparing meals uniformly consisting of meat, potatoes and bread provides a diet which is markedly deficient in the elements of life-growth. Physiological experiments upon animals have shown that similarly limited dietary results in hastening old age and causing early death. I feel that I am within the bounds of conservative statement when I say that the general serving of more diversified food would add materially to the physical well-being of the people.



I have time only to refer briefly to the art of cooking and the art of canning whose methods and processes are based upon the sciences which I have mentioned.

#### Application of Heat Marked An Epoch

The application of heat in the preparation of foods for human consumption mark the first great epoch in the development of the races toward civilization. I wish I might stop long enough to pay a tribute and to utter an encomium to the memory of the first cook, and I wish that I were a good cook myself so that I might speak in this presence as to the manner born, but as a mere layman I presume to say the time is already here when the art of cooking must give its chief thought, first to the selection of a well-balanced ration of food, and second to the preparation of wholesome foods.

As to the art of canning, I wish I might tell you the complete story of its struggle from darkness to light, from dense ignorance of its materials and processes to the present day renaissance, which has placed in the hands of every professional canner the agencies for the selection and preparation of absolutely wholesome food.

Of course, we are indebted to that remarkable Frenchman, Nicholas Apert, who in 1810 discovered the process of preserving food by the application of heat. His method was successful but he did not know why it was successful. For more than fifty years the canners of this country prepared their foods in a reasonably successful manner, but they did not have any scientific explanation for their success.

It was not until such men as Professor Russell of the University of Wisconsin and Professor Prescott of the Massachusetts Institute of Technology in 1895 to 1897 applied discoveries of Pasteur and Koch to the technic of canning, that we really knew the scientific basis of our processes. Since that time the industry has made amazing progress, and now faces all its problems with supreme confidence.

It is true that some types and forms of germ life have been only recently discovered in foods but we are absolutely sure of finding the correct process for their control because we know that the application of heat under discoverable conditions will destroy such germ life. I wish, therefore, to close this short and rather inadequate statement with a word of assurance to the housekeepers of America that the canners and preservers of food in this country are leaving nothing undone to develop absolutely certain methods and processes to assure wholesome foods. The investigations made by Dr. Rosenau of Harvard University established beyond doubt that canned foods could not be subject to ptomaine poisons. The investigations now being made by him, Dr. Meyer, Dr. Dickson, Dr. Jordan and others will establish with equal certainty that canned foods can be made free of the toxin created by the bacillus botulinus.

#### Canners Believe in Bacteriology

I have one other hopeful note to sound. The canners themselves are committing themselves to a most rigid inspection of their canneries to the end that every preventive measure may be taken to produce wholesome foods. The modern canner believes whole-heartedly in the

sciences of bacteriology, sanitation and nutrition. He knows that his art rests upon their fundamental deductions and decrees. He realizes that he can have no permanent success unless he conforms his processes to them.

Further, these canners have committed themselves to a recognition of the basic rights of the consumer:—

First—The right to receive complete and efficient service from the agents who are charged with the duty of supplying the human necessities of shelter, clothing and food.

Second—The right to be served with products of honest and adequate quality.

Third—The right to be protected from unjust and excessive charges for these products.

Fourth—The right to be fully informed as to the nature and value of the products prepared and offered for sale.

An art so directed and inspired must have an increasingly convincing appeal to the intelligent housekeepers of this country. Without such an art properly supported and prosperously organized, this people would face starvation. The provincialism, the prejudice, the misinformation, which sometimes condemns canned foods, is a menace to the continuity and stability of our food supply. The thought which I bring to you therefore, is first, that the factors which produce 40 per cent of the essential foods of the nation are performing their duty with care and intelligence. Second, that they have a right to expect to receive the sympathetic interest and support of the intelligent leaders of public opinion, particularly the housekeepers of America. I ask them to join with us in developing the progressive and enlightened processes on the farms and in the factories, that will guarantee to the nation an abundant and wholesome food supply.

—o—

#### Sugar Exports From Cuba to United States

The increased price of sugar accounted for the large increase in the value of the declared exports from Cuba to the United States during the past year, as compared with 1919. The total exports and the exports of sugar from the various consular districts in that country during 1919 and 1920 are shown in the following table:

Items	1919		1920	
	Pounds.	Value.	Pounds.	Value.
Sugar .....	635,663,650	\$37,345,087	585,108,839	\$78,499,816
From Anitilla.				
All other articles .....		1,478,444		2,506,106
Total .....		38,823,531		81,005,922
From Cienfuegos.				
Sugar .....	589,617,280	35,172,742	322,524,800	39,470,078
All other articles .....		1,528,273		1,527,108
Total .....		36,701,015		40,997,186
From Caibarien.				
Sugar .....	416,243,525	22,509,079	389,943,850	44,798,841
All other articles .....		84,782		70,066
Total .....		22,593,861		44,868,907
From Sagua La Grande.				
Sugar .....	464,309,029	25,107,844	447,391,290	50,420,446
All other articles .....		268,083		454,654
Total .....		25,375,927		50,875,100



# "Direct Marketing" Declared Unfair

## Dr. Haney of New York University Business Bureau Discusses Wholesalers' Problems

BY DR. LEWIS H. HANEY

Director Bureau of Business Research, New York University

THE reasons for the present chaotic condition of marketing and the tendency to what is sometimes called "direct marketing" are complicated but I believe they can be chiefly found in the development of advertising as a demand-creating force. Having gone to the consumer with their advertising campaigns, the manufacturers want to go to the consumer with their deliveries. Supplementing this advertising factor there has been a horde of speculators attracted into the marketing field by the rising prices of recent periods; and the easy credit and large profits of the war time encouraged manufacturers and retail organizations to extend the scope of their operations into the wholesale field. The turn of the tide, which has already taken place will change these conditions and I look for a halt in the tendency to combination in marketing.

The conditions which favor direct marketing are:

1. Monopoly or a high degree of concentration in production.

2. Heavy advertising of individualized specialties.

3. Certain characteristics of the commodity involved, such as the need of special service or the development of special machinery for its effective distribution.

4. The grouping of several commodities into a "line" of goods which can be advantageously marketed together.

5. Of course, the possibility of standardizing the business operation of adopting uniform methods of merchandising facilitates direct marketing.

In the case of soap not only is there no monopoly or high degree of concentration, but, after all, there is no essential or lasting basis for identifying the different brands of ordinary soaps. In the long run there will be duplicates for any brand. Moreover, soap is logically related to the grocery line and it doesn't seem possible that separate soap stores will ever be developed.

### Wholesalers Report Procter & Gamble's Marketing Policy a Failure

My conclusion that the soap business is not one in which combination marketing is logical, is substantiated by the questionnaire which on behalf of the New York University Bureau of Business Research, I recently sent out to several hundred wholesale grocers throughout the country. Of those who answered the question "Are Procter & Gamble selling more, or less, soap in your territory," 90 per cent wrote that they were selling less.

Other evidence may be secured from the returns. (1) It is clearly apparent that this company's direct selling program is breaking down, in that various kinds of wholesale dealers are being utilized: a few wholesale grocers appear to have been approached with offers of exclusive territory, while rather frequent use is made of wholesale dealers in butter and eggs, produce and other lines. (2) Again, the company appears to be becoming more lax in its quantity dealings and has found it necessary to make delivery in two box lots "freight prepaid," to accept 25 box orders for delivery in 5 box lots as required, and to make up pooled orders for 100 box lots. (3) Clear evidence is shown that the company is also slipping in its credit requirements as it does not appear to be enforcing the 10 day limit as of old and several cases of extended credit for considerable periods have been reported. (4) Finally, I think that a very important factor in the success of the Procter & Gamble policy must be their ability to market their full line of products, especially soap powders and shortening; but the returns to the questionnaire show a clear indication that the company is having difficulty in this direction, one or two brands of soap being all that it seems necessary for the retailer to carry.

### Summary of Questionnaire

The following is a summary of the answers to the questionnaire:

1. Are Procter & Gamble disposing of more (or less) soap in your territory? **ANSWER:** Less. (80 per cent of the 144 replies received thus far were to this effect.)

2. What evidence is there for this conclusion? **ANSWER:** Our salesmen report decreased sales of Procter & Gamble products, and we observe that retailers are often out of these products as was not formerly the case. Also we are selling more of other brands of soap.

3. What developments in Procter & Gamble's price policy, and have their prices moved with others? **ANSWER:** Procter & Gamble prices have moved about parallel to others. They have lead in the decline insofar as their less popular brands are concerned, their prices being met by other manufacturers.

4. Have they shown any tendency to force a full line on the retailer? **ANSWER:** Yes, they have. 57 per cent of the replies received were affirmative on this point, which is rather striking inasmuch as 23 per cent did not answer or stated that they did not know. The general report is that the company is trying to force a full line by offering lower prices on large mixed orders. One dealer especially comments on their attempt to force Crisco on retailers.

5. Have they opened branch houses or local store-houses? **ANSWER:** No branch houses;



but they carry a small stock in local public warehouses. They have gotten dealers in butter and eggs or produce to put in their lines at a considerable number of points. One third of the replies report some arrangement for local stocks, mostly in Middle-Western points.

6. Have they been more liberal in granting credit? *ANSWER:* Yes—somewhat. We have clear evidence that they have not been able to enforce their previous credit limits.

7. Are they selling more to chain stores? *ANSWER:* In general they are, where chain stores exist; but in some cases not.

8. Have they increased advertising? *ANSWER:* Somewhat, but not generally. They have put on coupon campaigns and house-to-house canvasses in the Middle-West, but at a majority of points no increase is noticeable.

9. What increase have they made in sales force? *ANSWER:* At some points they have increased their sales force and at others not. (23 per cent of the replies received indicated an increase in sales force, while 36 per cent report no increase.) The rapid turnover in their sales force has been very noticeable.

10. What advantage over Procter & Gamble do you have? *ANSWER:* We have great advantage over them chiefly in our more frequent calls on the trade and our ability to fill small orders quickly. Also we have an advantage in being able to supply all parts of products needed by the retail grocer.

11. What advantage does Procter & Gamble have over you? *ANSWER:* The possession of well-known brands and the use of intensive methods of marketing.

12. What have you done to meet their move? *ANSWER:* Pushed competitive brands.

13. What is the attitude of retailers? *ANSWER:* A majority are dissatisfied with Procter & Gamble policy. This includes practically all of the smaller retailers and some of the larger ones. A majority of the retailers would prefer to buy of wholesale grocers but some are temporarily caught by the appeal of the phrase "direct buying."

14. Do you handle any Procter & Gamble goods? Out of the 144 replies, only eight state that they are handling Procter & Gamble goods? Practically all of these were in the East. A few more reported that they were closing out stocks on hand when that company adopted its new policy.

15. Are any wholesale grocers buying Procter & Gamble goods? *ANSWER:* A few handle very small quantities.

#### **Combination Marketing is Wasteful**

If all soap manufacturers were to sell direct to the retail trade, there would obviously be great waste on account of duplication, assuming that wholesale grocers continue in existence. We would have half dozen or more branch houses in each marketing territory added to the houses of the wholesale grocers. There would be a great increase in salesmen and also in office force involved in distributing soap. Also there would be waste in transportation. The situation would be somewhat analogous to a water company which tried to pipe the water to each house direct from the plant. Now, then, if one soap manufacturer sells direct we have a proportionate waste; to the

extent of his single business we have a duplication of facilities and force. Thus Procter & Gamble by increasing sales force, renting space in local warehouses, and hiring local drayage concerns to make deliveries, are duplicating the facilities of wholesale grocers already in existence. This is wasteful.

#### **Combination Marketing is Unfair Competition**

Combination marketing is also unfair? It is unfair to the wholesaler. The jobber holds himself out to perform all the work connected with his function. He carries a line of all those products which are handled by retailers and called for by consumers as "groceries." He sells to big and little retailers in large or small quantities. The manufacturer does not offer to do a complete wholesale business. He merely wants to skim the cream. After experimenting with the metropolitan district of New York, he decides that he wants to sell to the large retailers and to the more conveniently located ones, and he makes his prices accordingly. He refuses to meet the jobber along the whole line and to take the skim milk as well as the cream.

In the second place, it is unfair to the wholesaler because the competition of the manufacturing marketer is not based on economic efficiency in marketing. His marketing is subordinated to his manufacturing policies, and is but a device for carrying out his desire to maintain resale prices and to force his full line on the retailer. He is not a bonifide wholesaler; he is an advertising manufacturer. Notice that there is an inevitable tendency to unfair costing for he is engaged in two lines of business and may easily make one carry the other. He may do his marketing at a loss and charge that loss up to manufacturing profits. Such a practice would be unfair to the separate wholesale competitor.

It is unfair to the retailer. It forces the retailer to accept inferior service. It makes him buy Crisco in order to get desired brand of soap. The wholesaler carries various brands and the retailer may take his choice; but Procter & Gamble virtually say: "If you want a little of our popular brand of soap (which you must carry to meet the demand we have created for it) you must take enough of our soap powder and shortening to make a 5 box lot." Above all, it subjects him to an unfair quantity discount system which tends to drive the small retailer out of business.

It is unfair to the public. It means wasteful duplication of plant and service. It is opposed to economical transportation in carloads, both mixed carloads and "straight." And it tends to the disruption of the most economical and convenient system of distribution, and even of the competitive system itself. The tendency to increase excessive wasteful advertising should not be overlooked.

#### **Lessons of the Wholesaler**

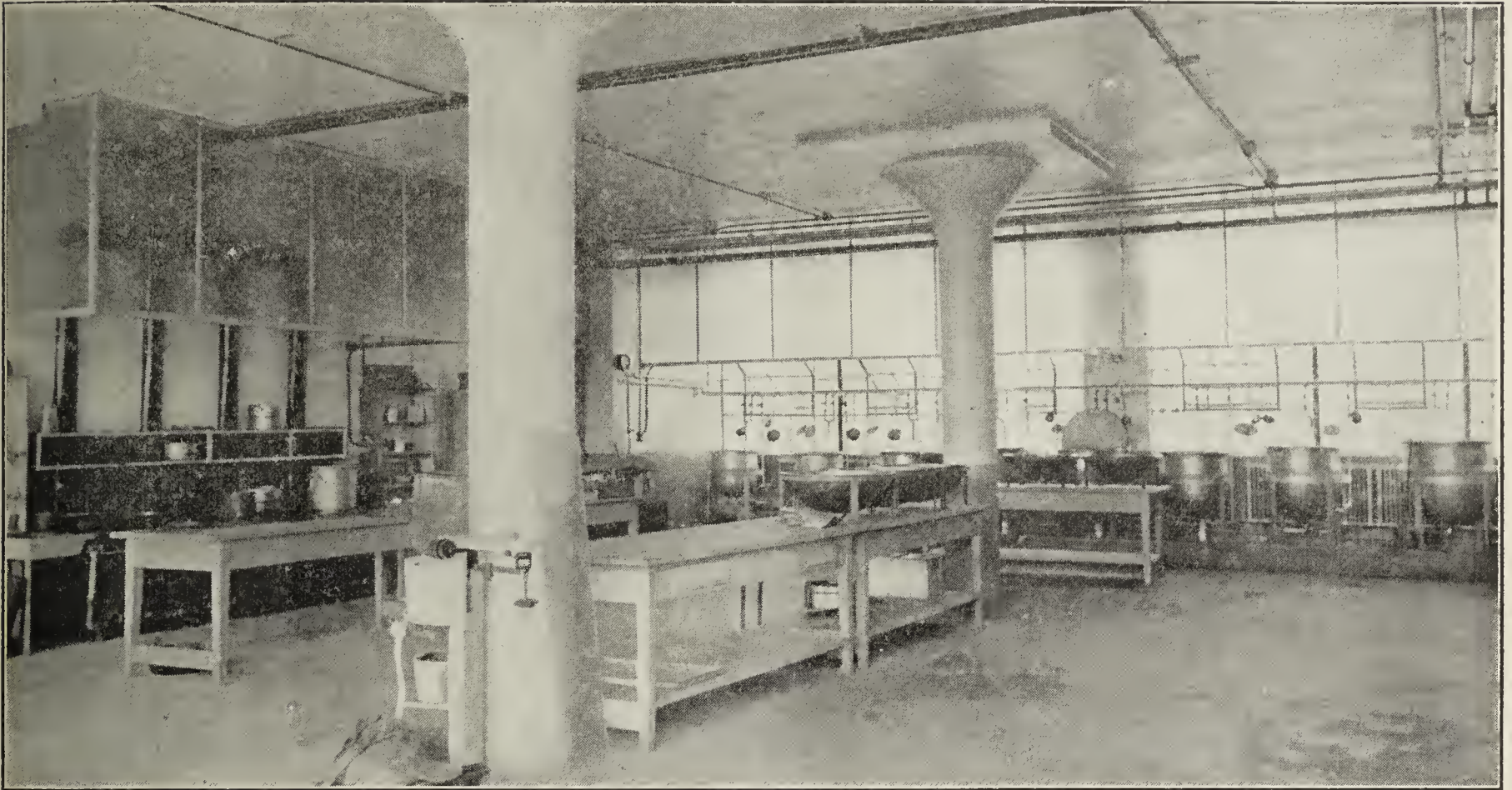
The wholesale grocer should study the difference in service rendered by himself to different manufacturers; or in other words should study the different services rendered by manufacturers to him in connection with the marketing of their products. Some manufacturers advertise more than others. Some employ specialty men to a greater extent than others, etc. In view of this fact, is it not important that a careful study and

(Concluded on Page 24)



# Food Products Made by New Process

Keystone Instant Food Company Has Completed Plant at Danbury, Conn.



The Main Kitchen of the Keystone Food Plant

**T**HE Keystone Instant Food Company has recently completed and now has in operation a new food manufacturing plant at Danbury, Conn. When in full production, the plant's output will be 60,000 packages per day of Keystone products, which include prepared soups, meat specialties and rice pudding.

Keystone foods are made by a recently patented process by which the raw materials are first prepared, mixed and cooked, and then dried in drying ovens.

The company is headed by J. W. Vanderbeck as president; Theodore Titze is treasurer and Albert Teets, secretary. Dr. William Edward Fitch is in charge of the research laboratory.

Dr. Fitch was formerly an instructor in the Fordham University New York and is the author of a two-volume work on dietotherapy.

The soup products of the company consist of chicken gumbo, pea and tomato and clam broth. The meat and fish specialties include roast beef, corned beef and chicken hash and codfish cakes. Rice pudding with raisins is also put up in similar form.

The retail selling prices of these products are 15 cents for the soups, 20 cents for the rice pudding and 35 cents for the meat, chicken and fish specialties. Distribution will be through the wholesale and retail grocers.

The Keystone Instant Food Company states



The Foods Are Packed by Uniformed Young Women





Drying Ovens Used for Keystone Foods

that its process of preparing food is an entirely new discovery by two chefs, Auguste Gay and Xenophon Kuzmier, who have served in several of the leading European and American hotels. It is claimed for this process that all of the important food elements, including vitamins, are retained the same as in fresh foods.

The factory building erected for the manufacture of Keystone foods is a steel reinforced concrete structure 60x160 feet, two stories. The building is designed with an eye to sanitary features, and the equipment was all especially built. The main kitchen is equipped with large aluminum steam kettles, and a special range of

hotel size. The ovens for extracting moisture have a daily capacity of from 3,000 to 5,000 lbs. of the finished product, aggregating from 40,000 to 60,000 packages.

The Keystone foods are made directly from fresh meats and vegetables, and the storage building 90 by 220 feet was especially designed for storing raw foods such as beans, carrots, celery, cabbage, okra, peas, potatoes, peppers, rice, turnips, flour, sugar, spices, etc., which are the ingredients of the products.

The packing of these foods is done by uniformed young women, all of whom are subjected to a rigid physical examination before employment.

#### Value of Lactic Acid

Manufacturers of soft drinks, confectionery, fruit juices, etc., use large quantities of tartaric and citric acids for flavoring. These manufacturers, naturally desirous of giving their patrons what is best for them from a hygienic standpoint, have been interested in the assertions, based on experiments, of Professor Metchnikoff of the Pasteur Institute, Paris, that lactic acid is a desirable substitute for tartaric and citric acids.

The basis of Prof. Metchnikoff's investigations was his knowledge of the fact that certain aborigines addicted to the use of sour milk attained long life due to the presence of the Bulgarian bacillus which secretes lactic acid in the intestine.

What special advantages does lactic acid possess over tartaric and citric acids when used to impart to food products an agreeable acid taste?

From the standpoint of health, one advantage is the bactericidal action of lactic acid. Lemon juice, which contains considerable citric acid is easily decomposed by moulds;

while tartaric acid is regarded as food for certain kinds of yeast.

Small quantities of lactic acid are sufficient to suppress the activity of most yeasts and bacteria. Tests were made to discover the effect of lactic acid on the organisms met with in the digestive tract, which showed that the acid possesses certain germicidal action.

Compared with carbolic acid, it has been shown that the relative bactericidal activity of lactic and carbolic acids is a 3:5. Although lactic acid is quickly transformed in the intestines into its sodium salt, it exerts its full disinfective power in the stomach and duodenum.

The sodium lactate formed in the intestinal tracts acts to loosen the bowels thus cleansing the system of the products of decompositions.

Chemists have determined that 1 3-4 pounds of certain pure edible lactic acids should be equivalent to one pound of citric acid; that 1 1-2 pounds should be equivalent to one pound of tartaric acid.

On the basis of these conclusions, it is claimed that the use of lactic acid is desirable in the manufacture of drinks, candies and foods.



# A Bacteriological Study of Canned Ripe Olives

## Results of Investigation Made by Bureau of Chemistry Following Cases of Botulinus Poisoning

BY STEWART A. KOSER

Bacteriologist, Microbiological Laboratory, Bureau of Chemistry, United States  
Department of Agriculture

AS a result of the first of the recent series of outbreaks of botulism traceable to the consumption of ripe olives infected with *Bacillus botulinus*, many lots of canned ripe olives were collected by inspectors of the Bureau of Chemistry for bacteriological examination. These were obtained, for the most part, from various retail and wholesale houses in all parts of the country and bore the label of the same company as did those responsible for the fatalities. While the primary object of the investigation was the detection of the presence of *Bacillus botulinus*, this object was extended to include a study of the types of microorganisms responsible for the spoilage and also to determine whether viable microorganisms might be encountered in apparently normal containers. The containers subjected to examination included all sizes of both cans and glass jars. Some were apparently normal while others were swelled or obviously spoiled.

The total number of cans and glass jars, both normal and spoiled, which were cultured by various members of this laboratory, together with the number showing the presence of living organisms, is summarized as follows:

Types of organisms found	
Colon group .....	81
Colon group, sluggish liquefaction of gelatin ( <i>Bacillus</i> (cloacae) .....	4
<i>Bacterium fluorescens</i> (liquefying) .....	2
<i>Proteus</i> .....	3
Other Gram-negative, non-spore-forming bacilli, not identified .....	5
Gram-positive, aerobic, spore-forming bacilli, gelatin liquefiers—	
<i>Bacillus cereus</i> type .....	3
<i>Bacillus mycoides</i> type .....	4
<i>Bacillus mesentericus</i> type .....	6
Type not determined .....	19
Slender, Gram-positive, aerobic or facultative anaerobic bacilli, oval terminal spores, gelatin not liquefied ...	10
Gram-positive diplococci .....	31
Gram-positive staphylococci .....	10
Spore-forming, obligate anaerobes .....	6
Yeasts .....	3
Mold ( <i>Aspergillus terreus</i> ) .....	1

In addition to these, *Bacillus botulinus* was found in seven of the spoiled glass jars.

### Presence of Living Micro-organisms Revealed

Thus, is it seen that all the obviously spoiled glass jars, and, with one exception, all the swelled cans revealed the presence of living micro-organisms. On the other hand, the normal containers were, for the most part, sterile. In this connection it is interesting to note that 4.4 per cent of the normal cans were found to

contain viable organisms, while in the normal glass containers the proportion was decidedly higher, namely, 9.5 per cent. Of the 157 swelled or "springy" cans, all but three gave positive cultural tests. Two of these three were "springers," due probably to imperfect exhausting, and were no doubt otherwise normal. The third was a "hard swell." Whether the failure to obtain living organisms from this one can was due to lack of a greater diversity of culture media or whether the causative organisms had been killed as a result of their own metabolic products is not known.

Of the total of 480 containers examined bacteriologically 117 of those which had yielded positive cultural tests were studied further to gain some knowledge of the types of organisms present. As a rule, extensive cultural and biochemical tests were omitted, and merely the general type or group to which the organisms belonged was determined. A summary of the types obtained from the 117 containers thus studied is shown below. The figures indicate the number of times each was encountered.

#### Experiment with cans

Exp. No.	
I. Number of normal cans cultured .....	181
Of this number 173 were sterile, while 8, or 4.4 per cent, were found to contain viable micro-organisms.	
II. Number of "swelled" or "springy" cans cultured ...	157
Of these 154 contained living microorganisms, while 3 were apparently sterile 2(of these 3 were "springers," the other was a "hard swell").	

Total number of cans cultured .....

338

#### Experiment with glass containers

Exp. No.	
I. Number of containers normal in appearance and odor .....	116
Of this number 105 were sterile, while 11, or 9.5 per cent, revealed the presence of living micro-organisms.	
II. Number of containers obviously spoiled or of bad odor .....	26
All of these 26 gave positive cultural results.	

Total number of glass containers cultured ..

142

Total number of cans and glass containers cultured .....

480

Flora of swelled cans.—The flora of swelled cans was found to consist largely of members of the colon group, for of 85 swelled cans studied this group was obtained from 75, and from 40 of these in apparently pure culture. In the others they were found in mixed culture with the several types of Coccaceae, the aerobic, Gram-positive, spore-forming bacilli, or, more rarely, with an obligate anaerobe, with *Proteus*,

\*From Journal of Agricultural Research, Vol. X, No. 5, Dec. 1, 1920.



or with a yeast. In three instances spoilage, with resultant swelling of the can, was evidently due to spore-forming anaerobes only. In one instance *Proteus* was found in pure culture. A few of the swelled cans yielded cultural results from which no evidence could be gathered as to the type of organism causing gas formation within the can. Thus, an aerobic, spore-forming, Gram-positive rod was the only type obtained from 2 swelled cans, while from two others Gram-positive cocci were obtained in pure culture. Since none of these organisms attacked carbohydrates<sup>2</sup> with gas production, it is evident that the gas-producer had disappeared or was overlooked.

**Normal containers.**—As previously shown, 8 normal cans and 11 normal glass containers were found to contain living microorganisms. Four of these 8 normal cans yielded cultures of the colon group. The others contained cocci and several types of aerobic, spore-forming bacilli. The finding of members of the colon group in 4 of the normal cans was rather surprising. Evidently for some unknown reason the bacilli failed to multiply to any extent in these cans. Without exception, the types encountered in the normal glass jars were aerobic, spore-forming, Gram-positive rods. Several were identified as *Bacillus mesentericus* and one as *Bacillus cereus*.

**Spoiled Glass Jars.**—The flora of the spoiled glass jars was as a rule more varied and complex than that of the swelled cans. The contents of several jars were obviously spoiled and disintegrated to a mushy consistency with a disagreeable odor, unrecognizable as that of olives. These yielded a diversity of types of which the following are illustrative:

1. Putrefactive anaerobe which digested a cooked meat medium with a putrefactive odor, an aerobic Gram-positive, spore-forming rod, and an unidentified Gram-negative bacillus.

2. *Bacterium fluorescens liquefaciens*, *Proteus*, aerobic Gram-positive, spore-forming

<sup>2</sup>Chemical analyses by the Food Control Laboratory of the Bureau of Chemistry showed the liquor in which the olives were packed to contain from 0.16 to 0.23 per cent reducing sugars after inversion, expressed as percentage of invert sugar.

bacillus, and an unidentified non-gas-producing Gram-negative bacillus.

3. *Staphylococcus*, a yeast, and Gram-positive, sporing bacillus.

4. Gram-positive diplococci, colon group, *Aspergillus terreus*, and a Gram-positive, spore-forming rod.

No definite correlation between the odor of the spoiled samples and the type of organism contained therein was noted. The swelled cans from which the colon group only was obtained were recorded as possessing either a flat or slightly "off" odor—that is, they lacked the characteristic fragrant aroma of the first-class product. Since many of the sterile normal cans, particularly of certain brands, had a similar odor, it is doubted whether this condition can be ascribed solely to the metabolic activities of the colon group. Three cans containing spore-forming anaerobes possessed a disagreeable or rancid odor. The liquor, together with portions of the olives from several of the most offensive cans, was fed to guinea pigs without ill effects.

The large numbers and diversity of types encountered, particularly of the non-spore-formers, point to insufficient heating of the product. While it is realized that there may be a slight leakage along the seam of the can immediately after heating, and with subsequent closure, it would seem improbable that this could account entirely for the results obtained in this investigation.

#### SUMMARY

(1) In the bacteriological examination of 480 commercial containers of ripe olives, living microorganisms were obtained in practically every instance from samples which were abnormal, as indicated either by a swelled condition of the container or a bad odor.

(2) Viable microorganisms were found in a small percentage of normal containers. These were either aerobic, spore-forming bacilli, cocci, or apparently dormant members of the colon group.

(3) A study of the organisms encountered in the spoiled samples showed a great diversity of types, among which the colon group predominated.

## Improved Method for Examination of Cacao Butter

A REPORT was made by Eugene Bloomberg at the 1916 meeting of the Association of Official Agricultural Chemists, on the critical temperature of dissolution determination and a test for tallow and hydrogenated oil which he had originated. Mr. Bloomberg's method has been subjected to further study by Walter F. Baughman<sup>2</sup>, the results of which were reported by him at the recent convention of the Association of Official Agricultural Chemists. He hopes that his investigation has cleared up some obscure points and made the methods more reliable.

The critical temperature of dissolution determination is practically the Valenta test<sup>3</sup>. Cacao

butter and other fats dissolve in acetic acid on heating. The critical temperature of dissolution is the temperature at which a solution of 5 cc. of melted fat in 5 cc. of glacial acetic acid becomes turbid on cooling. Practically all potential substitutes for cacao butter with the notable exceptions of hydrogenated oils, oleo stearine and tallow, have a considerably lower temperature of dissolution than cacao butter, and when mixed with pure cacao butter they lower the critical temperature by an amount approximately proportional to the amount substituted. The critical temperature of dissolution of any fat varies with the strength of the acetic acid, and Mr. Bloomberg therefore recommends that the acetic acid be standardized against an authentic sample of cacao butter. The purity or sophistication of the sample under

(1) Jour. Assoc. Off. Agric. Chem. 3, 486 (1920).

(2) Associate Referee; Oil, Fat and Wax Laboratory, Bureau of Chemistry, Washington, D. C.

(3) Jour. Soc. Chem. Ind. 3, 643 (1884).



examination is then indicated by comparing its critical temperature with that of the authentic cacao butter.

Mr. Bloomberg sent six samples of adulterated cacao butter to five collaborators. They made a critical temperature of dissolution determination on each sample. Four reported adulteration of each sample. The fifth drew no conclusions from his examinations, but his results plainly indicated adulteration.

It is obvious that the reliability of this method depends on the constancy of the critical temperature of dissolution of cacao butter produced under different conditions of manufacture, or from beans grown in different localities. The results in Mr. Bloomberg's report do not shed much light on this point. Accordingly, the critical temperature of dissolution has been determined on six samples known to be pure and four commercial samples supposed to be pure. The results are given in Table 1. Samples 2-6, inclusive, were pressed in a commercial plant in the presence of H. S. Bailey, formerly of the Bureau of Chemistry, from beans grown in various localities. They represent, therefore, butters of commercial grade. Samples 7-10, inclusive, were collected in the open market by Mr. Taber of the Baltimore Station of the Bureau of Chemistry. The observed critical temperatures of the first six samples are practically constant, but the results obtained on the other four samples are lower and the variations are wide enough to cause one to be suspicious of their purity. However, the acid values of the four commercial samples are greater than the acid values of the six authentic samples.

It is well known that the acidity of a fat influences the results of the Valenta test. Free acids in cacao butter have a similar influence on the critical temperature of dissolution. The influence is illustrated by the results given in Table 2.

Samples 2-5, Table II, were prepared by adding portions of free fatty acids obtained from pure cacao butter to the butter represented by sample 1. The first column in that table gives the acid values (mg. of potassium hydroxide required to neutralize the free fatty acids in one gram of the sample). In the second column are tabulated the observed critical temperatures, and in the third column is given the lowering of critical temperature per unit of acid value. The lowering is proportional to the acid value. One unit of acid value causes an average reduction of 1.2 degrees. If we use this factor to correct the results obtained on the commercial butters (samples 7.10, Table 1) we find that the corrected results are in line with those for the authentic samples. It is, therefore, important to determine the acidity and to make the proper correction if necessary.

The critical temperatures of dissolution of some of the possible adulterants of cacao butter have been determined (samples 11-20). With the exception of hydrogenated cottonseed oil, tallow and oleo stearine, they are all considerably lower than cacao butter.

The results obtained on samples 21-35 show to what extent adulteration with these various

products lowers the critical temperature of dissolution. The results indicate that one should, by the use of this method, be able to defeat 5 per cent or more of coconut and palm kernel oil stearine. Peanut oil, cottonseed oil and cottonseed oil stearine have higher critical temperatures than coconut and palm kernel oil stearines, and when mixed with cacao butter, the critical temperature of the latter is reduced to a less extent. Perhaps one cannot detect with certainty adulteration with less than 10 per cent of these products.

The apparatus and details of the method

TABLE I  
CRITICAL TEMPERATURE OF DISSOLUTION OF CACAO BUTTER AND SUBSTITUTES

Sample	Acid Value	Temperature of Dissolution	
		Observed °C.	Corr'd °C.
1 Cacao butter, Standard.....	1.07	90.	91.3
2. " " Trinidad .....	1.22	89.5	91.5
3 " " Sanchez .....	1.08	90.5	91.8
4 " " Caracas .....	1.12	90.5	91.8
5 " " Bahai .....	1.12	89.5	90.8
6 " " Accra .....	1.55	90.	91.8
7 " " Commercial Sample .....	3.51	86.	90.2
8 " " " " .....	2.86	86.	89.2
9 " " " " .....	2.55	86.5	89.6
10 " " " " .....	2.97	87.	90.6
11. Coconut oil stearine		Soluble at room temperature	
12. Palm kernel oil stearine		"	
13. Cottonseed oil		52.5	
14. " " (wintered) .....	0.30	43.	
15. Cottonseed oil stearine .....		60.5	
16. Sesame oil .....		52.	
17. Peanut oil .....	1.00	65.	
18. Hydrogenated Cottonseed oil .....		98.5	
19. Tallow .....		85.	
20. Oleo stearine .....		91.	
21. Cacao butter containing 5 per cent Coconut oil stearine		85	
22. " " " 10 p. c. " "		82.5	
23. " " " 20 p. c. " "		73.	
24. " " " 5 p. c. Palm kernel oil stearine			
25. " " " 10 p. c. " "		82.5	
26. " " " 20 p. c. " "		74.	
27. " " " 5 p. c. Cottonseed oil		87.5	
28. " " " 10 p. c. " "		86.	
29. " " " 20 p. c. " "		83.	
30. Cacao butter containing 10 p. c. Cottonseed Oil Stearine		87.	
31. " " " 20 p. c. " "		83.	
32. " " " 20 p. c. " "		80.	
33. " " " 10 p. c. Peanut oil		86.5	
34. " " " 20 p. c. " "		84.	
35. " " " 30 p. c. " "		82.	

used by the author in making the determination are as follows: A thermometer is inserted tightly into a cork fitting a 6"x3-4" test tube, a small groove being cut in the side of cork for the escape of hot air. The thermometer extends

TABLE NO. 2

Sample	Acid Value	Dissolution Temperature Degree C.	Fall in Dissolution Temperature per unit of acid valus
1. Cacao butter (Standard)	1.07	89.	
2. " " to which has been added cacao butter			
3. " " "	5.92	83.	1.29
3. " " "	5.92	83.	
4. " " "	11.12	78.	1.09
5. " " "	19.68	67.	1.18

down far enough to be completely covered by 10 cc. of liquid. Graduation marks are scratched on the test tube at 5 cc. and 10 cc. from the bottom. The melted fat is poured into the tube up to the 5 cc. mark and then acetic acid up to the 10 cc. mark. The cork holding the thermometer is inserted and the test tube is placed in a larger one (4 1-2" x 1 1-2") containing glycerine, and held firmly in place with a cork.

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## Builders of the American Food Industries



FRANK C. SOULE

President Merrell-Soule Company, Syracuse, New York

**F**RANK C. SOULE, president Merrell-Soule Company, Syracuse, N. Y., was born April 3, 1861. He is a son of Oscar F. Soule, who was a pioneer salt manufacturer and in 1869 formed a partnership with G. L. Merrell, under the name of Merrell & Soule, for the manufacture of food products. They took up the manufacture of condensed mince meat in 1885, making famous the "None Such" brand. The company was incorporated in 1893 and for the past fifteen years have been pioneer manufacturers of powdered milk and powdered eggs, owning basic patents in this line which have been adjudicated upon and sustained by the Court of Appeals.

The executive offices, laboratories and mince meat manufacturing plant are located at Syracuse, N. Y., and the several milk plants are located in various dairy sections of the country.

Frank C. Soule descended from George Soule who came to this country in the Mayflower and is eight generations re-

moved from this pilgrim. Mother, Agnes Lawrence Soule.

He received his educational training at schools in his native city. At the age of eighteen years he entered the employ of Merrell & Soule, and at twenty-one was admitted to partnership, and for years has been the active head and president of the company.

In addition to the above, he is a director and vice president of the National Bank of Syracuse and is a director in the Syracuse Trust Company. Mr. Soule was a Commissioner for the State of New York to the Jamestown Exposition in 1907. He is a member of the Century Club; Citizens' Club and Onondaga Golf and Country Club of Syracuse.

He has a 1,000 acre estate on the North Shore of Oneida Lake in Oswego County, N. Y. (Vanderkamp Farms), consisting of a shooting and fishing preserve in addition to 300 acres under cultivation, where he is breeding a high grade of Holstein-Friesian pure bred cattle known as "Vanderkamp Herd."



# FOOD LEGISLATION

## Benzoate of Soda Fight Up Again

### Attempt Made to Pass Bill in Indiana Legalizing Use as Preservative

**A**N attempt to legalize the use of benzoate of soda came in the session of the Indiana General Assembly, when Representative Charles E. Dean, a farmer and orchardist, of Marble Hill, presented House Bill 155, which would have amended the state food and drug laws so that the use of one-tenth of one per cent of benzoate of soda would have been legal.

I. L. Miller, state food and drug commissioner, assisted by representatives of the packing industry in Indiana, fought the bill in committee. Following a hearing on the measure, the House Committee on Rights and Privileges reported favoring the indefinite postponement of the bill, which report was ratified in the house, and benzoate of soda is taboo in Indiana, except in interstate commerce, for at least another two years, or until the policy of the state food and drug officials is set aside, either by a change of the official policy or by such legislation as proposed in the Dean bill.

Representative Dean, in support of his measure, declared he believed Indiana food packers and producers were discriminated against by the Indiana law, inasmuch as the Federal regulations permits the use of benzoate of soda as a preservative, when the product so preserved contains a printed statement of the fact that it has been so preserved. He said that as a manufacturer of cider he sought the enactment of a law that would enable him to compete with others in the same business in other states.

State Food and Drug Commissioner Miller informed the house committee that the proposed legalization of the use of one-tenth of one per cent of benzoate of soda would not accomplish the results desired by the author of the bill, and that the State incurred the risk in legalizing the use of any benzoate of having to police the entire food packing industry to see that the limitation is respected. Mr. Miller stated that before the use of benzoate of soda as a food preservative had been forbidden by the Indiana authorities, it was discovered that frequently soft drinks contained as much as three to four tenths of one per cent of the preservative.

Bearing out the assertion of Commissioner Miller, that one-half of one per cent of benzoate of soda in cider would serve effectively as a preservative to the prevention of alcohol, W. D. McAbee, chemist, representing the T. A. Snyder Preserve Company, declared that laboratory tests had convinced him that even as much as four-tenths of one per cent of benzoate would not guarantee against the fermentation of cider, and he indorsed the statement of the food and drug commissioner that the packer or preserver who sought thus to sterilize his product, would

invite the attention of the Federal prohibition officers.

Indiana was the scene of the first big state fight against benzoate of soda. The Curtice Brothers Company, some years ago brought suit against Dr. Harry E. Barnard, then state food and drug commissioner, and the Indiana State Board of Health, to enjoin the prohibition of benzoate of soda in food products sold within the state. The Federal court trial of the issue attracted nation-wide attention. The case was determined in favor of the State, which was given jurisdiction over goods not in interstate commerce. In other words, the moment a food product preserved with benzoate of soda was taken from the shipped package and placed upon the shelves of the retailer, it was subject to Indiana regulation. As a result products preserved with benzoate of soda have completely disappeared from Indiana.

The Indiana law authorizes the State Board of Health to approve the use of preservatives, and inasmuch as benzoate of soda has never had the approval of the board, it is outlawed by the broad and sweeping provisions of the Indiana law on the subject of pure food and drugs.

State Food and Drug Commissioner Miller successfully resisted an effort made by certain bottlers during the recent sugar crisis, to use saccharine as a sugar substitute, a practice likewise illegal in Indiana.

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#### Flavoring Manufacturers Must Disclose Formulas

The following letter to the trade concerning alcohol permits for flavoring manufacturers was written by Thomas E. Lannen, secretary of the Flavoring Extract Manufacturers' Association and the National Manufacturers of Soda Water Flavors:

"Last year the ruling was to the effect that all that a manufacturer of soda water flavors selling directly to the trade needed to do was to state on his application for a permit the name of the soda water flavor and the percentage of alcohol. But within the last year a practice has grown up on the part of manufacturers of soft drink flavors, none of whom belong to our association, of selling these flavors through retail grocery stores, etc., instead of selling them directly to the bottlers or soda fountain dispensers. Furthermore, a great many so-called soft drink flavors are given such names as "Brandy Flavor," "Rum Flavor," "Whiskey Flavor," etc., and sold through the grocery trade and other retail stores instead of directly to the trade.

"The officials in Washington do not know who are members of our association and who are not,



and because of the practice of these other people, explained to me that they were compelled to make a ruling requiring practically the entire formula to be given in making applications for renewal of permits.

"Consequently all of our members will be required to give their formula in making applications for renewal of permit, except as follows: A manufacturer has the right to give only the names of those ingredients which, in his opinion, make his product unfit for use for beverage purposes: But you can see that this is practically no concession whatever. The real effect of the new ruling is that the formula must be given.

"In the meantime our members will be permitted to purchase alcohol on their old permits."

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### **Codification of Minnesota Food Laws**

Thomas E. Lannen of Chicago, counsel for the Flavoring Extract Manufacturers of the United States and other trade organizations, has sent out notices regarding the codification of food and dairy laws of Minnesota, which he says, provides in Section 4 that food shall be deemed to be adulterated "if it contains any added boric acid or borates, salicylic acid or salicylates, formaldehyde, sulphurous acid or sulphites, hydro fluoric acid or fluorides, coal tar dye or color, saccharin or any added poisonous or other added deleterious ingredient which may render such article unwholesome, injurious or detrimental to health."

It is declared that the above quoted provision would prohibit the use of sulphurous acid or sulphites in all food. This would include syrups, fruits, etc. When sulphur dioxide is used in syrup, etc., it gives a reaction for sulphurous acid upon a chemical test, so that it might be said that the syrup contained "sulphurous acid". An effort will be made to eliminate "sulphurous acid" from the provision of the above bill.

The above quoted provision would prohibit the use of coal tar dye or color. The existing law of Minnesota likewise prohibits the use of coal tar colors. Interested parties will endeavor to have the words "coal tar dye or color" appearing in the above provision of the bill stricken out. Coal tar colors are allowed by the National officials and in all the states of the Union except Minnesota and North Dakota.

It will also be noted that saccharin is prohibited in food under the terms of the above bill.

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### **New Law for Beverages in Nebraska**

Senate bill No. 196 introduced in the Nebraska Senate by Senator M. F. Rickard provides that no person shall manufacture or sell any carbonated or still beverage or other closed containers in that State without first having obtained a license from the State Department of Agriculture. The license fee provided is \$50 a year. Section 4 of the bill provides that carbonated or still beverages shall be made of "pure cane or beet sugar \* \* \* \* with pure flavoring materials, and the finished product shall contain not less than 7 per cent of sugar."

The bill further provides "all beverages not conforming to the requirements of this act shall be deemed adulterated and are hereby prohibited."

The bill further provides that each bottle, "when filled with a soft drink or other non-alcoholic beverage, shall be distinctly labeled with the true name of the soft drink or other non-alcoholic beverage therein contained, the volume of the container, and whether an imitation or artificial product, either by printed label, crown cork, or by name so blown into glass bottle, stating trade name of soft drink or other non-alcoholic beverage and name of manufacturer. Such beverages shall not be placed in bottles with internal stoppers."

Section 8 of the bill reads as follows: "No carbonated or still beverages commonly known as soft drinks shall be imported into this State for sale, unless the person so importing such soft drinks can show that they meet the requirements of this act."

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### **Bills in Massachusetts Would Make Profits Public**

Senator William H. McDonnell of South Boston has introduced two bills (Nos. 741 and 846) in the Massachusetts Legislature, which seek to hold wholesalers and retailers, hotels and restaurants up to public scrutiny in the matter of the prices paid for their goods and the prices at which they are sold. Representatives of the wholesale and retail grocery trades in Massachusetts have appeared in opposition to the measures.

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### **Illinois Bill Affects Cold Storage**

A bill has been introduced in the Illinois Legislature by Representative John F. Healy of Chicago prohibiting the placing of fowls in cold storage unless entrails have been properly removed. The bill also places new limits on the length of time that meats and other products may be kept in cold storage before being placed on the market.

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### **Ice Cream Law Introduced in Illinois**

Ten per cent butter fat is required for ice cream in a bill introduced in the Illinois Legislature by Representative Charles H. Francis of Woodstock, Ill. The bill also requires that pasteurized milk or cream must be used in the manufacture of ice cream and that no preservatives, neutralizing agents, saccharine, renovated or process butter, fats or oils foreign to milk or other ingredients allowed may be used.

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### **Bill to Regulate Ice Cream in Texas**

Ice cream will be required to contain not less than 8 per cent butter fat and nut and fruit ice cream not less than 6 per cent butter fat under the provisions of a bill introduced in the House of Representatives of Texas. Regulation of ice cream manufacture is provided, with a State health officer to make inspections.



# Growing Use of Corn Oil as Food

## In 1918 About 70 Per Cent of All Corn Oil Produced Was For Edible Purposes

CORN oil has been used to a greater or less extent for most technical purposes for which other vegetable oils are used. One of the principal technical uses for which it has been in good demand is in the preparation of rubber substitutes, for which it seems to be well adapted. Both crude and refined oils are used for this purpose.

Corn oil is still used in considerable quantities for soap making, this being one of the principal uses for the poorer grades, which can not be refined except at a large loss. The oil is very well adapted for making soft soaps, but it is not so suitable for the harder and better quality of soaps. The foots obtained on refining the crude oil are, of course, used exclusively for soap making.

It is reported that corn oil has been used in wool spinning where a cheap noncombustible oil is demanded. The present price, however, probably makes it uneconomical for that purpose. The iodine number also would indicate that it might not be entirely safe.

In the manufacture of lubricants, corn oil has had a limited application. For this purpose it has not been used alone, but has been mixed with blown rape oil and mineral oil. However, the fact that it has a tendency to gum makes it unsuitable for this purpose, and its use in lubricants has practically ceased.

Corn oil is classed sometimes as a nondrying oil and sometimes as a semidrying oil. Its iodine value might place it in the semidrying class, but it has few drying properties and does not form a hard film. Its use in paint, therefore, has been limited to the cheap grades of barn paints, when combined with other and better drying oils. This use is also rapidly declining and will no doubt be entirely discontinued if the price of the oil remains high.

When corn oil was first produced in marketable quantities it was used exclusively for technical purposes. Gradually, however, as refining methods were improved and the demand for edible oils increased, the oil was diverted to edible purposes until at present probably 75 per cent of the total output is utilized in that way. It is in demand for practically all purposes for which cottonseed oil is used, and the producers, brokers, and refiners are confident that in time all the corn oil of good quality will be used for edible purposes.

The shortage and the high price of olive oil during recent years have served to stimulate the use of other vegetable oils for salad-oil purposes, and corn oil is being sold in increasing quantities to meet this demand. In line with this development its use in cookery has also been increased. The sale of refined corn oil for household purposes is at present limited almost entirely to a few firms.

Corn oil can be heated to a relatively high temperature without smoking or developing an

odor and does not darken as readily as some other edible oils. In this connection it may be mentioned that there is a conviction that in cookery it is more economical to use liquid fats than solid fats, because there is less waste. It is easier to measure the necessary quantity when the material pours than when it is solid; consequently excess fat is more easily avoided.

There seems to be some difference of opinion among bakers regarding the adaptability of corn oil for shortening in crackers and bakery goods. The refined oil is used to some extent for this purpose and is said to give results similar to those obtained with cottonseed oil. Some bakers are inclined to believe that its use is limited because of its yellow color, such color being undesirable in the manufacture of white goods like soda crackers. For sweet goods the oil is usually used blended with other vegetable oils. In bread it is also used by some bakers when mixed with lard.

The general impression gained from interviews with large bakers is that the future of refined corn oil in the baking industries is assured. The principal reason why it is not used more generally at present is because it is not obtainable at all times in sufficient quantities. The bulk of the refined oil is marketed as package goods for the retail trade; therefore for the bakers only such quantities are available as are not needed to satisfy the retail demands. A considerable increase in the production of the refined oil could no doubt easily be absorbed in this field provided the price compared favorably with that of other oils suitable for the same purpose.

### Production of Edible Oil

In 1919 there were 22 corn-oil producers in the United States, but early in the year several of these had suspended operations on account of adverse economic conditions. Of the 20 producers only four, so far as is known, turned out refined or edible oil, one being a hominy miller and the other three starch and glucose manufacturers. This small number of refiners, however, is no indication of the relative quantity of oil which is refined for food purposes. According to Bailey and Reuter, 111,000,000 pounds of corn oil were produced in 1918, of which approximately 76,000,000 pounds, or about 70 per cent, were refined for edible purposes.

It is the practice of a few of the large operators to refine not only the oil which is produced in their own plants, but also to buy large quantities of crude oil from other producers for refining. Companies which have developed a large package trade find it necessary to do this in order to supply the demand created by their extensive advertising.

Crude corn oil as a rule is a fairly good product, especially that produced from dry-process germs, and in some cases it can be used for edible purposes without refining. The oil possesses a peculiar cereal-like odor and taste, which is not unpleasant in itself, but is undesirable when the



oil is intended for salad or cooking purposes. The color is a deep yellow, which also must be removed from oil which is intended for food purposes.

### The Future of Corn Oil

So far as can be concluded from the survey of the industry, corn oil appears to have established itself as a satisfactory product for which there will be a steady demand in the trade. That the oil can always be produced is assured by virtue of the fact that it is a by-product of the manufacture of certain staple corn products, and it is only in case of an overproduction of fats and oils that it might be discontinued and the germs disposed of as feed. Such a situation seems improbable, however, and at the most would doubtless be only temporary. As to the utilization of corn oil, the consensus of opinion among those who are in position to know seems to be that within a few years the oil will be used almost entirely for edible purposes, except only that which is of such poor quality as to make its refining unprofitable. The sale of the oil in retail packages will very likely be further developed, and its use by bakers is also likely to increase. The amount of corn oil used for edible purposes in the future will be determined by the quantity available rather than by any question as to its utility. At the present time some bakers, while admitting that it is suitable for their products, use cottonseed oil because the supply of corn oil fluctuates so that it is not always obtainable in sufficient quantities.

Although the supply is even now inadequate it is liable to become more so in the immediate future because of the decline in the brewing of beer. The elimination of the breweries removes one of the principal markets for hominy grits and flakes, and therefore the milling of degerminated corn is likely to decrease. As previously stated, several plants shut down in the winter of 1919. This was due in part, however, to the fact that at the close of the war there was on hand an oversupply of corn meal and flour. According to Bailey and Reuter, there was a decrease in 1918 of 7,000,000 pounds of corn oil, and the 1919 production may show a further decrease. It is certain that the demand in this country for corn meal and flour is not sufficient to make a steady market for such products. In the Southern States, where the use of corn products is much more general than in other sections of the country, the supply is largely derived from mills which do not degerminate the corn and hence produce no oil. It must not be understood, however, that the elimination of the breweries entirely removes the market for brewers' grits, for in the manufacture of non-alcoholic cereal beverages the same material is required, but this market already exists, and there would need to be a great increase in the consumption of such beverages to make up for the decline resulting from the discontinuance of beer brewing. The economic situation with regard to sugar also may be an important factor. The increase demand for corn sirups and other saccharine products may result in an increased milling of degerminated corn.

## Use of Mutton and Lamb in the Diet

EARLIEST records mention the use of the flesh of sheep for human food. The extent of its use, however, has varied at different times, in different countries, and even in different sections of the same country at the same time. Thus, although the United States as a whole does not use mutton and lamb extensively, a large quantity is used in a narrow section along the Atlantic seaboard north of the Potomac River.

Figures compiled in the Bureau of Animal Industry, United States Department of Agriculture, indicate that during the last five years only 3.9 per cent of the meat consumed in the United States was mutton and lamb. The average yearly meat bill (dressed-meat basis) of the American consumer during that period contains the following items:

	Pounds.
Lamb and mutton .....	5½
Beef and veal .....	66
Pork (excluding lard) .....	69
<hr/>	
Total annual meat consumption per capita .....	140½

These figures show the proportion of lamb and mutton to other meats to be very small, and are more remarkable in view of the fact that much of this rather small percentage is consumed in the Eastern States. The sectional popularity of mutton and lamb may be seen in figures compiled from the department's estimates of sectional meat consumption.

In the East 1 pound of mutton and lamb is used for every 5 pounds of beef, in the South the

ratio is 1 to 10, in the West it is 1 to 12, and in the Central or Corn-Belt States it is 1 to 20.

The reason for the limited use of lamb and mutton throughout the central section of the United States probably had its origin in the days of the development of the great Corn-Belt region west of the Appalachian Mountains. At that time the sheep owned by the settlers of that region came largely from the North Atlantic States and had been developed almost without exception for wool production, regardless of the inherent flavor of the meat. The flesh of these animals was no doubt tough, not so palatable as other meats, and, possibly, owing to the crude methods of caring for it, much of it was unfit for use. And besides, the number being limited, it was necessary to retain the animals in order to have enough wool for warm clothing.

As this section of the country has been somewhat slower in the development of mutton breeds of sheep, and as much prejudice against the meat has been handed down from one generation to another, there has developed the idea that the flesh of all sheep is not appetizing and carries peculiar flavors, an opinion which a large percentage of the people never try to substantiate or disprove.

Furthermore, there is a feeling that the task of butchering a sheep is exceptionally difficult and that it can be accomplished only by some one expert in the work.

There is a characteristic taste in cooked mutton and lamb, due to the chemical contents of the



meat fat, that makes it easy to distinguish from other kinds of meat. The same is true of beef, chicken, venison, or rabbit. Eastern consumers have a liking for the peculiar flavor of mutton and lamb, and the trade has been able to sell the meat at fancy prices in that section.

Much has been said and written of the so-called "woolly flavor" of mutton and it was with a view of determining the cause and if possible the means of elimination, either in cooking or butchering, that experimental work was conducted by the Bureau of Animal Industry in collaboration with the Office of Home Economics.

These experiments included test, as outlined below, of the most common theories advanced for the objectionable taste that occasionally occurs in mutton and lamb.

(1) Parts of carcasses were brought in contact with wool and permitted to stay in this position 30 minutes. They were then cooked and compared with similar parts of the same carcass treated in the ordinary way.

(2) Carcasses were permitted to stand and develop gas before the entrails were removed, and compared with others of the same breed and age as to the flavor and texture.

(3) The fell (or external layer of muscular tissue) was removed from some portions of carcasses and these compared with other similar portions of the same carcass and from which the fell had not been removed.

(4) Tests were made at frequent intervals on different portions of the same carcass and a check kept on the taste and texture of the meat.

(5) Comparative tests were made of sheep and lambs of different ages to note the effect of the age of the animal upon the taste.

Comparative tests were made of wool and mutton breeds to note the effect of breeds upon flavor and texture.

In only two cases was anything approaching a disagreeable flavor noted. One of these was in a rather fat part of a carcass that had been stewed and was partially cooled when sampled. This was killed in the regular way and should not have shown the flavor.

The other case of strong flavor was apparent in chops kept 10 days in the cooler and kept to the verge of spoiling, outside, before cooking. This taste was most pronounced in the outer layer of fat and was no doubt due to some chemical change which had taken place in that portion of the meat.

In some cases, when the meat was cooked without removing the fell, the latter when tasted separately was less pleasant than the meat itself.

It can not be denied that in rare cases meat sold as lamb or mutton has an objectionable taste. This may be due to the fact that the carcass was in reality that of an old ram or goat. Holding the meat for a long time, particularly in the presence of odors of decaying vegetables or other matter, may also cause an unpleasant taste. Leaving the fell on the cooked meat also increases the possibility of the undesirable taste developing.

With reasonably careful slaughtering and caring for the lamb or mutton carcass, there is a practical certainty of having wholesome, appetizing, and economical meat for family use. A Government bulletin describes how such slaughtering should be done.

### Why More Mutton and Lamb Should Be Used

Possibly the first reason for urging the more extensive use of mutton and lamb may be found in the nature of the sheep industry itself. The old method of raising sheep for wool alone is rapidly on the wane in the United States. The method developed in the last decade in the farm States is rapidly increasing. This industry is

being conducted for the production of both wool and lambs, and as the increased production of wool is essential to the normal development of the country, it is necessary that a market for the meat be developed in proportion to the increase in the production.

**FOOD VALUE.**—The fact that mutton and lamb are well liked, easily digested, rank well with other meats as regards nutritive value, and are palatable, wholesome, and usable in many ways has long been known. The following table shows the percentage composition and fuel value per pound of lamb, mutton, and some other meats:

Average Composition of Meats					
meat (as purchased)	Protein	Fat	Water	Refuse	Fuel value per lb.
	P. C.	P. C.	P. C.	P. C.	P. C.
Lamb:					
Breast .....	15.4	19.1	45.5	19.1	1,075
Leg .....	15.9	13.6	52.9	17.4	860
Mutton:					
Fore quarter ....	12.3	24.5	41.6	21.2	1,235
Hind quarter ....	13.8	23.2	45.4	17.2	1,210
Veal:					
Fore quarter ....	15.1	6.0	54.2	24.5	535
Hind quarter ....	16.2	6.6	56.2	20.7	580
Beef:					
Fore quarter ....	14.5	17.5	49.1	18.7	995
Hind quarter ....	15.4	18.3	50.4	15.7	1,045
Pork (fresh):					
Ham .....	13.5	25.9	48.0	10.7	1,320
Shoulder .....	12.0	29.8	44.9	12.4	1,450

The table above is from Farmers' Bulletin 142, Principles of Nutrition and Nutritive Value of Food.

**FREEDOM FROM DISEASE.**—The fact that a smaller percentage of sheep carcasses as compared with those of other commonly used domestic animals is condemned under the Government meat inspection still furthers the opinion that mutton and lamb are the most wholesome of meats and should be in more general use.

Because of the foregoing evidence and the fact that mutton provides a convenient source of fresh meat in sections where beef is unobtainable most seasons of the year, directions for the farm butchering of sheep have been prepared, which may be obtained from the Bureau of Animal Industry.

### Food Adulterations are Now Negligible in Pennsylvania

The second year of the administration of Governor William C. Sproul, broke all previous records in the Bureau of Foods, Pennsylvania Department of Agriculture. The annual report for 1920 submitted to Secretary of Agriculture Fred Rasmussen by Director James Foust shows that over \$600,000 was collected in license fees.

In 1907, the receipts of the Bureau amounted to \$55,732, increasing each year until last year the total receipts were \$626,472. The great bulk of the receipts came from margarin licenses, cold storage licenses and other licenses granted by the Department, only, a small amount coming from fines imposed under the pure food and drink acts.

With comparatively few exceptions the fines were imposed for local violations. The enforcement of the laws during the previous years had already brought about the breaking up of wholesale fraud and adulterations of staple prepared foodstuffs and the fines imposed in connection with this class of goods are negligible in number.



# EDITORIAL

## The Wholesaler and Broker will not be Eliminated

SEVERAL recent events in the food trade seem on the surface to threaten a breaking away from the established methods of distribution. When a few months ago the Procter & Gamble Company decided to eliminate the wholesale grocer and market products direct there was a genuine alarm among jobbers, who had already had to combat charges from various sources that their function as distributors of food products had been proved unecomonical. Now the position of the food broker has been assailed through the action of the California Associated Raisin Company in establishing its own branch offices to take the place of the broker.

Going a step further, a canning company in California has opened its own retail stores and another canning company threatens to do likewise.

Some of the comments on these and similar trade tendencies display an alarm that is quite unwarranted. It is true that those wholesalers who had built up a large volume of business in Crisco and Ivory Soap feel the loss to some extent of this source of revenue, and the brokers who are eliminated by the California Associated Raisin Company may feel the smart for a time of the loss of this very profitable account, but neither of these developments need cause fear that the position of the jobber or the broker is seriously under fire.

To a few of the large food manufacturers it may prove desirable, from their point of view, to establish their own sales offices or to sell direct to the retailer, but as long as there are thousands of food producers who could not profit by this method of distributing their products the food broker is on safe ground. Likewise, the wholesale grocer need not seriously fear that his elimination by a few large food manufacturers endangers his future in the scheme of distribution. The growth of the chain store systems is a greater menace to the wholesaler than the desire of a few large food manufacturers to sell to the retailer direct. While the retail grocery business is largely controlled by small merchants, with limited capital, the wholesaler is indispensable. The tremendous burden of credit work necessary for the food manufacturer who desires to deal direct with his retail customers will forever keep the vast majority of manufacturers from taking such a step.

The further burden of the intensive and expensive sales effort necessary to reach tens of thousands of retailers is another good reason

why the elimination of the wholesaler is largely a vision of the imagination.

Some day, a less expensive method of distributing food products from the maker to the consumer may be devised, but many schemes have been tried and have failed. In a country of 115,000,000 people, covering such a vast expanse of territory, as do these United States, that day as far away as the millennium.

## The Wholesaler Still on Top Despite Frequent Agitation

THE discussions which are going on today relative to the economic importance of the grocery jobber have been heard before. Other lines of business have struggled through like periods of questioning and doubt as to the necessity of the middleman distributor. Not many years ago the hardware trade went through a trying time in which thousands of retailers formed their own buying associations, and went direct to the manufacturer as their source of supply. We know of no other trade in which direct buying was so thoroughly tried out. The upshot of the whole situation is that a few hardware manufacturers prefer to do business directly with the retailer; also there are some retailers, with sufficient capital to do so, who prefer to save the jobber's profit and buy direct from the factory. But the fact remains that fully 90 per cent of the hardware retailers still prefer, for reasons of convenience, capital and credit, to have the bulk of their dealings with the jobber.

Except in certain sections of the East, where the retailers are close to manufacturers' plants, the large bulk of hardware is distributed through the jobber. After years of agitation in which much bitterness was aroused, the position of the hardware jobber is today as strong, if not stronger, than ever.

There is no reason to believe that conditions will prove otherwise in the food trade, where the multiplicity of items bears a close analogy to the hardware business.

## Twenty-five Reasons for Business Confidence

Thomas E. Wilson, president of Wilson & Company, packers, also president of the Institute of American Meat Packers, gives, in a recent article, twenty-five reasons for confidence in the business future of the United States. Mr. Wilson's arguments are well worth careful study. They are:

1. After revising prices downward more severely than any other important nation, with the possible exception of Japan, the United States is still open for business.



# C O M M E N T

2. The recent decline in values, it is asserted by statisticians, has been more abrupt than any during the last fifty years. This means that since we are making our readjustments faster than ever before in a similar situation the reaction should be ended proportionally earlier.
3. Buying, which was stagnant, has begun to move. The price declines in agriculture, industry and commerce are now reflected in mercantile markets and the public is responding to the new values. This will have a favorable reflex action.
4. Creditors, especially in mercantile lines, are helping debtors to tide their businesses over the emergency.
5. Labor in many lines has met management half way in the effort to keep costs of production low enough to justify operation.
6. With the exception of a few commodities, production and stocks probably will not exceed domestic necessities when buying is renewed vigorously. An important bank declares that in some lines there is an actual shortage.
7. Our construction programme is far behind. Sooner or later road building, housing, public construction and additional manufacture of railroad equipment will help invigorate business in general.
8. The replacement of equipment in foreign countries has only begun. Under improved exchange values and more nearly adequate foreign credit this situation would stimulate trade with America.
9. Europe sold us twice as much last year as the year before. Her ability to sell to us increases her ability to buy from us.
10. While the volume of employment has decreased in cities, the availability of labor has increased on the farms, where labor was sorely needed.
11. Many banks and businesses have accumulated reserves which are proving helpful.
12. In most instances industrial inventories have been readjusted safely and operating economies have been effected without a deplorable loss in efficiency.
13. The purchasing power of the wage-earner is holding its own, so far as actual values are concerned, since reductions in wages seem to be following rather than preceding declines in commodity prices.
14. Some industries are entering the new year with a fair prospect that, although the money volume of their sales and the amount of their profits may be smaller, a reasonable rate of profit on a normal volume of business will be earned.
15. The danger of a financial panic seems definitely to have passed. Not all corporations are using their full line of credit and some are taking a load from the banks by carrying a large cash balance.
16. The period of readjustment has been one of the most orderly ever known in such a trying situation.
17. The railroads are moving the nation's commerce in fairly adequate fashion and there is a prospect of further improvement in the service.
18. Public utilities are receiving more reasonable treatment from the public which they serve.
19. Some manufacturers who closed their plants and were filling orders from warehoused stocks have started operations again.
20. Certain markets give evidence that we have drawn nearer to stabilized value.
21. Savings, if the situation in Chicago is a criterion, have increased greatly since Christmas.
22. Industry can look for funds to a group of new investors in corporate securities—persons who made their first acquaintance with bonds during the war period.
23. A comprehensive movement is under way to finance export trade.
24. When foreign credit is re-established our products will find a greatly augmented merchant marine ready for their transportation.
25. Our country possesses greater strength in its huge resources than any needs growing out of present conditions can exhaust.

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## The Packers' Bill

Opposition to the bill now before Congress for Government control of the meat packing industry has sprung up from various sources, including the Chamber of Commerce of the United States, which contends that adoption of this legislation would substitute Government for private conduct of great basic industries.

The danger of such a measure as is proposed for control of the packing industry is that, if passed, it may prove to be the entering wedge for Government control of what are essentially private industries. Government control of the railroads and the American merchant marine has proved so greatly inefficient as to cause serious doubt as to the wisdom of such a venture in the industrial field.



## Improved Method for Examination of Cacao Butter

(Continued from Page 15)

Heat is applied and the apparatus frequently shaken until a clear solution of fat in acetic acid is obtained. The solution is then allowed to cool with constant shaking, without removing it from the glycerine bath, and the temperature noted at which it becomes turbid. By not removing the solution from the glycerine bath, it cools more slowly, and permits the dissolution temperature to be read more sharply and accurately. The fat and acid should be measured very carefully as small variations in the proportions of fat and acid affect the results. The fat should be filtered through filter paper in a hot air oven (100°C.) in order to remove traces of moisture. It is then well to allow it to cool somewhat before measuring the 5cc. sample and to measure the sample and standard butter at the same temperature. The acetic acid used was labeled "Acid Acetic. Glacial, Contains 99.5 per cent of absolute acetic acid."

### Test for Hydrogenated Oil, Tallow, Oleo Stearine, Lard and Paraffin

Mr. Bloomberg's directions for making the acetone test for hydrogenated oils and tallow are to dissolve 5 cc. of melted fat in 5 cc. of acetone, heating if necessary, and to allow the mixture to stand over night in cold water. If tallow or hydrogenated oil are present, a flocculent precipitate is obtained. It is the opinion of the referee that these directions are too indefinite. If the water is very cold, cacao butter will solidify and the analyst might confuse this with the precipitate caused by tallow or hydrogenated oil. Indeed, one of the collaborators had this experience and reported the presence of an adulterant in a sample of pure cacao butter. If the room is not too warm (say at 20-22°C) the solution of fat in acetone may be allowed to stand over night at room temperature. If hydrogenated oil, tallow, oleo stearine, lard, or paraffin is present, a precipitate is formed, while pure cacao butter will not solidify or precipitate.

In order to shorten the time required for the test, Mr. Bloomberg suggests using a mixture of equal parts of acetone and carbon tetrachlorid instead of acetone. Since fats are more soluble in this mixture, it is necessary to cool the solution in ice water for 5-30 minutes. A flocculent precipitate is obtained if hydrogenated oil, tallow, oleo stearine, lard or paraffin is present. A blank should be run using pure cacao butter. Sometimes a precipitate is obtained in a sample of pure butter, so if the sample being tested gives a precipitate, it should be removed from the ice water and allowed to remain at room temperature for a time. If the precipitate is only solidified cacao butter, it will melt and go into solution; if the precipitate is due to any of the above mentioned fats, it will not melt or go into solution. Less than 5 per cent of these substitutes can be detected by this method. The acetone-carbon tetrachloride mixture is preferable.

## "Direct Marketing" Declared Unfair

(Continued on Page 10)

analysis should be made of the situation with the idea of adopting some standard differentials in merchandising, according to the work that the wholesaler has to do under different circumstances?

The problem presented is a difficult one for it calls for harmonizing conflicting tendencies. On the one hand, is the tendency to maintain the separate independence of the merchandising wholesaler. On the other hand, is the tendency to reduce the wholesaler to the position of manufacturer's agent. One thing is certain: it is time to face the issue squarely. I would respectfully suggest that this subject would merit the appointment of a special committee of the wisest wholesalers for the purpose of making the necessary study and preparing a report.

The wholesaler's function furnishes a definite bond of interest among all wholesalers. I would suggest the desirability of perfecting an organization of wholesalers looking toward the protection of that function. We need some sort of super-organization of wholesalers in general, grocers, dry goods dealers, hardware dealers, etc., which would serve as a central board of strategy. Consider taxation for example. The present move for the tax on sales which has been largely engineered by certain interests which stand to gain by that movement is not one which in my judgment would be beneficial for for wholesale grocers or wholesalers in general. Most of the schemes for taxing sales tend to compel combination marketing. That is they favor the concern which markets directly and which, therefore, has the smaller number of transfers in ownership. All those who favor the maintenance of the separate and independent wholesalers should oppose most of these taxation schemes.

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### Decrease in Adulteration and Misbranding in Montana

That there has been a steady decrease in the adulteration and misbranding of foods and drugs since the Montana pure food and drugs act went into effect is shown by the biennial reports of the Food and Drug Division of the State Board of Health covering the past eight years. Of the number of samples examined during the years 1913-14, forty-one per cent was adulterated or misbranded; in 1915-16, thirty-five per cent; in 1917-18, twenty-five per cent; in 1919-20, eighteen per cent. These figures represent the findings of the State Board of Health food and drug laboratory on samples from foods and drugs that are particularly liable to sophistication, and for this reason, the board states, it should not be understood that such a high percentage of all foods and drugs on the public market at any given time was illegal. It is difficult to estimate what percentage of all foods and drugs is adulterated or misbranded, but food and drug authorities throughout the states agree that the figure is now below one per cent.



# NEWS OF THE FOOD TRADES

## Tariff Asked For Edible Oils

### Southern Cottonseed Crushers Make Plea Before House Committee

Efforts on the part of the producers of America's largest supply of salad oils and other edible oils were given encouragement at the conclusion of the tariff hearings before the House Ways and Means Committee in Washington for a permanent tariff on all imported edible oils. The hearings have been under way for more than three months and closed with a final plea of the Southern cotton seed crushers to have Congress put up high protective bars so as to prevent effectively the importation of Oriental oils from Japan and China. Representatives of the crushers were given assurance at the end of the hearing by Chairman Fordney of the committee, that the American edible oil interest would be protected.

#### Trade Divided on Tariff

The question of protective tariff on salad and edible oils is a divided question within the ranks of the edible oil industry in the United States. The industry, which elaims the distinction of having the second largest industrial association in the United States, known as the Interstate Cotton Seed Crushers' Association, produces more than 1,500,000,000 pounds of cottonseed oil alone, being greater than the combined production of all other vegetable oils and equal to the total farm, small shop and factory production of lard, and nearly equal to the total butter production of the country. More than 75 per cent of the crude cottonseed oil refined is used in making lard substitutes and from 83 to 92 per cent of the total fats and oils used in making lard substitutes is cottonseed oil, approximately one billion pounds of oil being consumed annually in this country.

#### No Concerted Action Taken

The industry, as an association, has not taken any joint concerted action to force a tariff through Congress on edible oils for various reasons. Chief among these is the fact that there are within the ranks of the industry individual members on both sides of the fence. With the farmer, crusher mill, and some domestic refineries, the argument is all for a protective tariff which will double the price of their finished product in the domestic market. On the other side is the domestic refinery, which imports large quantities of coconut, peanut and soya bean oils from the Orient. So expanded has become the edible oil industry in the United States, which furnishes the daily supply of lard compounds, cooking oils, salad oils, etc., that it is more than a national industry, having become, in many of its phases, an inter-national industry, drawing for

its raw supplies and materials from practically every country in the world which produces oleaginous nuts and seeds.

Argument before the committee of these larger concerns, which not only refine domestic cottonseed and peanut oils, but import even large stocks from foreign countries, is that because of the fact that the industry in this country produces 40 per cent more fats and oils than it can consume it must, perforce, look to foreign markets for sale of the surplus. Contention is made that if a tariff, barring imports of oils to this country is passed, that it will but mean diverting the supply that formerly came into this country for refining and resale, direct to European markets.

### Plentiful Supply of Sugar, Department of Agriculture Finds

Beet sugar production in 1920 exceeded the former record crop of 1915 by 27 per cent, and reached the high figure of 2,219,200,000 pounds, according to a preliminary estimate by the Bureau of Crop Estimates, United States Department of Agriculture. The increased yield was the result of a combination of large acreage and favorable weather conditions. Production of cane sugar is estimated to have been 385,974,000 pounds, so that the total estimated sugar crop for the United States was 2,605,174,000 pounds. This was 15 per cent above the record sugar production for the United States in 1913, and 53 per cent above that of 1919. Beet sugar has been gaining on cane sugar in production for many years, taking the lead as early as 1906.

Sugar produced in the United States is said to be approximately one-fourth of the quantity consumed, and both the total and per capita consumption have steadily increased. The per capita was 71 pounds a year during 1901-1905, and 78 pounds during 1906-1910.

In 1913 and 1914, the two pre-war years, the per capita consumption rose to 86 and 90.5 pounds, respectively. In the first year of the war, 1915, it dropped to 87.5 pounds, and in 1916 to 79.6 pounds. A rise to 83.5 pounds was noted in 1917, America's first year in the war. Despite the popular impression of a sugar scarcity in 1918, the rate that year was 78.7 pounds, followed in 1919 by 84.2 pounds.

Then came a period of extraordinary sugar consumption with 92 pounds in 1920, and the total arose to the enormous quantity of 9,750,000,000 pounds, or one billion pounds more than in the preceding year.

#### Now It Is Jiffy-Pie

The Jiffy Dessert Company, Waukesha, Wis., maker of Jiffy-Jell, is now advertising Jiffy-Pie, said to be "Real Lemon Pie by Simply Adding Water."

A free package is offered to purchasers of two packages of Jiffy-Jell. Newspaper advertisements contain a coupon for the grocer making the sale to turn in to the manufacturers for redemption at full retail price.

## Almond Growers Ask For Tariff

### Brief Filed With Ways and Means Committee of the House

In support of an appeal for a protective tariff of not less than 5 cents a pound on almonds in the shell and 15 cents a pound on shelled almonds, the California Almond Growers' Exchange of San Francisco has filed a brief with the Ways and Means Committee of the House of Representatives. The reasons advanced and a history of the almond industry are told by the exchange as follows:

"The California Almond Growers' Exchange is a non-profit, co-operative association of 3800 almond growers, representing 85 per cent of the almond crop produced in America. The object of the exchange is to market the almonds of its members at cost diffuse knowledge, improve culture and to do anything possible to advance the interests of the industry.

"At the present time the tariff is the lowest since the Civil War. The American grower has not heretofore been concerned in the tariff on shelled almonds, as the limited crop of American grown almonds has not made it necessary to undertake the shelling of almonds. Now, however, with an increase in production of more than 500 per cent, and further increases soon to follow, and with the market for almonds in the shell limited to the holidays, the American grower must shell almonds or decrease the output. The American grower is therefore, for the first time, vitally concerned in a fair tariff on shelled almonds. Since almonds in Europe shell four to one, and in America approximately three to one, it is the belief of the American grower that the tariff on shelled almonds should be at least three times as great as that on almonds in the shell.

"The investment of the American almond grower in land and improvements is estimated at \$65,000,000, representing more than 100,000 acres, bearing and non-bearing, mostly non-bearing. Roughly, 80 per cent of the money spent for almonds annually is for shelled almonds, the sale of almonds in the shell being confined very largely to the holiday trade.

"In 1919, under the most prosperous marketing conditions this country has experienced, the California almond grower, with a price that did not yield to him more than the cost of production, plus a fair interest on his investment, could not sell his 1919 crop, and there is today in the warehouse approximately 20 per cent of the 1919 crop that could not be sold because of the overproduction of almonds for sale in the shell and the low price relatively at which almonds from the Mediterranean were imported.

"The ever-increasing cost of labor is a serious problem, and while we admit that the cost of labor in 1920 is higher



than will probably prevail in future years, yet minimum wage laws established by the state and federal governments lead us to believe that we cannot expect any material decline in the cost of labor. Freight rates have advanced from a pre-war cost of \$1.40 to \$2.40 per hundred today. We likewise do not believe there is a possibility of decrease in freight rates in the immediate future. While the cost of foreign labor based on European money has advanced during and since the war, yet at the present rate of exchange the actual cost, based on the American dollar, is less today than pre-war.

"We do not base our appeal on the conditions of today, but we are willing to submit the data prepared prior to these abnormal conditions as the basis on which we appeal to you for a tariff. We attach a compilation of facts concerning the import tariff on almonds, which was prepared early in 1919, and which represents figures based on normal conditions.

"The summary of our statement in brief is this: That unless the American grower is given a tariff on shelled almonds of not less than three times as great as that on almonds in the shell he cannot find a market for the present production, as the year round demand is for shelled almonds, which are used constantly in the manufacture of year round products. As the tariff now reads, it means that the importer and foreign grower is selling in this country shelled almonds at a rate of duty equal to one-third of that assessed on almonds in the shell. In other words, the revenue of the government on the basis of 100 pounds of almonds in the shell is \$3. If these almonds are shelled in Europe they yield 25 pounds of kernels which at the rate of 4 cents for shelled almonds means a revenue of \$1 for an equal amount of production abroad.

UNITED STATES IMPORTS OF ALMONDS

(Note the increased importations from the year 1900-01).

Pounds		Pounds	
1900-01	5,140,232	1910-11	15,522,712
1901-02	9,868,982	1911-12	17,231,458
1902-03	8,142,164	1913	19,348,462
1903-04	9,893,852	1914	14,868,426
1904-05	11,735,081	1915	15,855,039
1905-06	15,009,326	1916	21,576,267
1906-07	14,233,613	1917	22,782,417
1907-08	17,144,968	1918	27,694,131
1908-09	11,029,421	1919	35,100,113
1909-10	18,556,356	*1920	22,358,818

\*One month, December, not included.

TARIFF ON ALMONDS

	Shelled	Unshelled
Morrill tariff, 1861	10c	6c
Mills bill	7.25c	5c
McKinley bill, 1890	7.25c	5c
Wilson bill, 1894	5c	3c
Dingley bill, 1897	6c	4c
Wilson bill, 1913	4c	3c

To Make Swiss Chocolate in U. S.

Souchard S. A. of Neuchatel, Switzerland announce the granting of an exclusive manufacturing and importing franchise to Horace L. Day Company of New York. This contract extends the right to manufacture and to import their goods under their name and trade marks in the United States. Souchard chocolate and cocoa are already known to the American trade. An expert from the main office in Switzerland will be permanently located in New York to represent his company.

Exports of Foodstuffs for 1920

The following statement of exports of domestic breadstuffs, cottonseed oil, meat and dairy products, from the United States for 1920, has been completed by the Bureau of Foreign and Domestic Commerce, Department of Commerce:

		Month of December		12 Months Ended Dec.	
EXPORTS BY GROUPS		1920	1919	1920	1919
Breadstuffs	Dollars	96 237 603	55 775 989	1 079 085 838	920 301 977
Cottonseed oil	Pounds	41 421 005	10 787 920	184 753 824	193 133 201
Cottonseed oil	Dollars	5 103 410	2 381 277	34 874 790	40 890 268
Meat and dairy products	Dollars	52 866 131	63 231 397	544 074 050	1 160 643 133
Barley	Bushels	2 520 191	433 899	17 854 227	37 611 840
Barley	Dollars	2 988 988	765 718	27 165 189	53 832 319
Corn	Bushels	3 041 087	1 525 989	17 761 420	11 192 533
Corn	Dollars	3 311 386	2 285 728	26 453 681	18 624 386
Oats	Bushels	466 370	3 432 242	12 877 874	55 294 479
Oats	Dollars	312 362	2 909 409	12 338 104	46 435 294
Rye	Bushels	5 626 331	2 419 546	57 070 490	32 898 166
Rye	Dollars	11 393 189	3 827 147	122 239 537	61 786 232
Wheat	Bushels	25 896 270	9 519 706	218 280 231	148 086 470
Wheat	Dollars	61 525 797	23 006 580	596 957 796	356 898 296
Flour	Barrels	951 730	1 312 982	19 853 952	26 449 881
Flour	Dollars	10 167 090	14 331 688	224 472 448	293 452 748
Beef, canned	Pounds	399 916	1 886 835	24 059 711	53 867 327
Beef, canned	Dollars	160 734	752 388	5 951 629	20 672 964
Beef, fresh	Pounds	1 583 434	6 061 769	89 649 148	174 426 999
Beef, fresh	Dollars	216 244	1 198 704	17 564 887	40 280 747
Beef, pickled, etc.	Pounds	3 053 993	3 135 069	25 771 176	42 804 724
Beef, pickled, etc.	Dollars	410 143	578 354	3 659 815	8 739 141
Oleo oil	Pounds	6 943 277	6 008 652	74 368 344	75 585 164
Oleo oil	Dollars	1 341 499	1 672 743	16 585 209	22 025 340
Bacon	Pounds	68 784 322	58 982 754	636 678 440	1 190 297 494
Bacon	Dollars	15 907 184	15 724 836	156 298 769	373 913 227
Hams and shoulders	Pounds	14 491 763	15 688 297	185 246 755	596 795 663
Hams and shoulders	Dollars	3 984 558	4 274 079	50 887 588	189 428 837
Lard	Pounds	90 080 092	63 645 722	612 249 951	760 901 611
Lard	Dollars	19 952 553	18 406 302	143 371 441	237 983 449
Neutral lard	Pounds	1 207 693	293 316	23 238 071	22 957 137
Neutral lard	Dollars	303 289	98 378	5 806 042	7 725 983
Pork, pickled	Pounds	2 691 452	4 125 550	38 724 241	34 113 875
Pork, pickled	Dollars	454 536	871 748	7 671 169	8 632 518
Lard compounds	Pounds	4 689 443	2 608 972	32 051 458	124 962 950
Lard compounds	Dollars	838 874	686 905	7 218 845	31 605 885
Milk, condensed, etc.	Pounds	20 058 590	76 783 397	414 250 021	852 865 414
Milk, condensed, etc.	Dollars	3 116 640	11 238 024	65 239 020	121 893 337

Advertising Campaign for Prunes and Apricots

Regarding the proposed advertising campaign of the California Prune and Apricot Growers, Inc., San Jose, Calif., H. G. Coy Kendahl, general manager, recently made the following statement:

"Our association has in preparation the most extensive advertising program ever prepared for a product of the soil. This will be combined with all sorts of publicity work, with the end in view of extending and developing the sale of 'Sunsweet' prunes. The increase in acreage coming into bearing with the 1922 crop and continuing for about six years means a tremendous increase in tonnage, and to develop the domestic markets to meet the greater supply our advertising program has been developed.

"In the way of immediate publicity work, the campaign begun in New York at the close of last year will be continued and its scope greatly extended. During February we will start local publicity in the following cities: Chicago, Philadelphia, Boston, Minneapolis, St. Paul, Cleveland, Indianapolis, Cincinnati, Kansas City, St. Louis and Wichita, Kan. This will be designed principally to move the present crop.

"Pitted prunes in the bakery products field have given wonderful satisfaction and in the Middle West, where they have been chiefly exploited, several surprising features have been developed. Prune bread and pies are

now made extensively in eight cities, with six more to be added shortly. One product which has met with instant success has been prune bar, the fruit used as a filler in crackers or sweet biscuits, in place of figs. Already 38 prominent biscuit companies in various sections of the country are dealing with the association. Pitted prunes are automatically making a market for themselves for hundreds of cars.

"National women's magazines, daily newspapers, trade papers, booklets and pamphlets and other educational mediums will be utilized to extend the consumption of prunes in every possible form during the next five years. We are stabilizing and developing the industry and are creating a present and growing market in the future."

National Corn Meal Week Suggested

The Federation of Nebraska Retailers has indorsed the suggestion of one of its members that a national corn meal week be named in March to aid the farmers of Nebraska and other states to find a market for their surplus stores of corn.

A committee to plan for the corn meal week have been appointed by President Anderson. According to present plans an attempt will be made to induce every family in the United States to buy two pounds of corn meal during the week.



## U. S. Canned Foods Popular in Britain

### Well Known American Brands May be Found in Nearly All Shops

That American canned foods are popular in Great Britain is shown by a letter from Edgar A. Foley, Commissioner of the U. S. Department of Agriculture in London, to E. G. Montgomery, in charge of the Foreign Markets Service. It says, in part:

"American canned fruits have earned an enviable reputation for themselves in Great Britain. In all the grocery and fruit shops one can see the well-known U. S. brands that have long since become staples in the American household.

"So wide has been this distribution that in five stores within a radius of two blocks from Cross & Blackwell's factory I counted four stores carrying U. S. canned foods and pickles. I maintain that it is some accomplishment to put American pickles and canned goods on sale opposite the Cross & Blackwell works. American peaches, pears, apricots and plums have all had a good sale and wide distribution, and to within the last few months have brought top prices.

#### Stocks Are Heavy

"Large stores of canned foods were held here in Great Britain at the end of last season, but as the demand was good, local merchants purchased heavy stores for this season at good prices. They forgot to figure on these canteen stores, held mostly in France, with the result of that when speculators and others bought these canteen stocks and brought them to England, there was a large oversupply. It is estimated that the present supply is about 3,000,000 cases above the normal supply.

"The result has, of course, been an enormous drop in all prices and the bankruptcy of many firms for large amounts. There is now no recognized price for any goods, and any quantities of peaches, pears or apricots can be purchased for 50 per cent of the importing price.

#### Hawaiian Pineapple Firm

"An exception to this rule is, however, the Hawaiian pineapple crop. In spite of adverse conditions, this market remains firm, and the product is in demand.

"It comes directly in competition with a great deal of colonial pine, but the high quality of the pack gives it a place of its own. We can well be proud of this pack. The cubes are even and the slices are likewise even and well cut. The colonials are far behind in pack. Their idea is to cut the pine in any shape to get it into the can. The result is a very poor pack and a resultant poor price.

"There is practically no American jam on the market at the present time."

#### Removal of British Embargo on Yeast

Consul General R. P. Skinner cabled from London, January 12, 1921, to the effect that the British prohibition against the exportation of yeast had been removed.

## Definite Labeling Urged For Fruit Products

How to label jams, jellies, preserves and marmalades in order that purchasers may obtain the particular variety they desire to buy is outlined in a statement recently issued by the officials of the Bureau of Chemistry, United States Department of Agriculture, in connection with the enforcement of the Federal Food and Drugs Act.

The joint committee on definitions and standards for food products has not yet issued standards for jams, jellies, preserves and marmalades, although the question of definition and standards for these products is now under consideration. The following statement has been issued by the Bureau of Chemistry for the guidance of manufacturers pending the issuance of definitions and standards.

"Investigations of the Bureau of Chemistry have shown that the commercial methods of preparing preserves, jams, marmalades and fruit jellies have been undergoing changes in recent years, so that at the present time these foods, as they are shipped in interstate commerce, are prepared from a greater variety of materials than was formerly the case. Fresh fruit, preserved, canned and dried fruit are all being used. In some types the fruit is ripe and in others unripe. Sugar and corn sirup are used as sweeteners of preserves, and it is expected that malt sugar and other wholesome sirups will be used during the coming season. Some products are acidulated by the use of phosphoric, lactic or tartaric acid. Due to the different kinds of materials that are used, the products of different manufacturers, and sometimes different brands of the same manufacturer, may differ in the important characteristic of flavor and consistency. The Bureau considers that the purchasers should be afforded means by which they can distinguish the particular variety of preserves, jam, marmalade or fruit jelly which suits their taste, and, therefore, deems it desirable that information concerning the nature of the ingredients which give the food its character should be stated upon the label."

#### A Coming Peach and Fig Campaign

The California Peach Growers' Association, of Fresno, is preparing to spend \$125,000 in a special advertising campaign during the spring months, according to an announcement by J. F. Niswander, vice president and general manager. The advertising drive will be particularly devoted to territory east of the Missouri, where it is planned to bring more intimately to the attention of the consumers the qualities of both the Blue Ribbon peach and fig. The appropriation will be spent largely in trade journals, window displays and newspapers. The name of the association has been changed to the California Peach & Fig Growers.

The C. F. Sauer Co., Richmond, Va., is putting on the market a new product, "Rum-O," which is an imitation rum and brandy flavor designed solely for culinary purposes. It may be used in nonalcoholic egg nog and punch; in mince meat, fruit cake, plum pudding and sauces of all kinds. It may be used as a substitute for rum or brandy in recipes calling for these ingredients.

## California Fruit Pack Shows Decline

### Over Two Million Cases Below Level of 1919, But Larger Than in 1918

The Canners League of California has just announced through Secretary McKinney of San Francisco totals by varieties showing the canned fruit and vegetable packs of California for 1920. Mr. McKinney announces that the reports from the various canners throughout California have been carefully compiled and those in northern and central California have been gathered personally, those in Southern California by H. M. Miller, director of the National Canners' Association's inspection work in Los Angeles, working in conjunction with the canners' association of Southern California.

The 1920 pack figures as announced are presented below and with them the 1919 and 1918 pack figures for comparison. It will be noted that the 1920 pack in both fruits and vegetables is smaller than last year, as was anticipated, while vegetables are smaller also than 1918 and 1917. The fruit pack in 1920 was larger than 1918 and has been exceeded only in 1919. Eliminating the latter year which was one of abnormally large production of canned fruits in California, all of the items of any importance were packed in slightly larger quantity than in 1918, and cling peaches materially larger, in this item even exceeding the 1919 pack. The total pack is a surprise and the figures show it to have been somewhat above anticipations.

Tomatoes and tomato products show a material reduction in pack below 1919, 1918 and 1917. Canned tomatoes have been packed in 1920 to the extent of less than half of either the two preceding seasons. Canned spinach shows a notable quantity and is an increase over 1919. The Canners' League figures are as follows:

FRUITS (ALL GRADES AND SIZES)			
	1920	1919	1918
	Cases	Cases	Cases
Apples .....	9,041	134,245	167,705
Apricots .....	2,312,020	4,395,204	2,233,314
Blackberries ..	161,359	114,349	119,111
Cherries .....	647,977	460,614	360,090
Grapes .....	114,886	104,446	99,068
Loganberries ..	14,267	11,708	48,992
Pears .....	1,184,288	1,071,687	811,950
Free peaches ..	1,547,687	1,962,700	1,392,595
Cling peaches ..	5,205,511	5,096,249	3,122,458
Plums .....	164,740	280,261	148,577
Raspberries ..		233	4,015
Strawberries ..	5,525	22,123	2,002
Other fruits...	15,562	42,584	432,860
Total cases	11,382,863	13,696,403	8,943,737

VEGETABLES (ALL GRADES & SIZES)			
	1920	1919	1918
	Cases	Cases	Cases
Asparagus ...	1,024,813	1,031,269	902,236
Beans, string ..	99,269	154,278	155,123
Peas .....	366,679	191,564	265,970
Tomatoes .....	1,858,822	3,809,979	3,884,973
Tomato prod'ts ..	833,019	885,906	1,809,805
Sp'nach .....	685,228	476,866	
Other vegetab's ..	382,116	501,657	1,267,713
Total cases	5,249,946	7,051,519	8,285,820

Grand total pack, cases	16,632,809	20,747,922	17,229,557
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#### Fruit Preservers to Advertise

An advertising campaign to educate the public to a greater consumption of jams, preserves and jellies, is included in the program of the National Preservers' and Fruit Products' Association, which held its annual convention in Philadelphia, January 17 and 18.



## Warns of Bills to Fix Profit Margins

### National Wholesale Grocers Association Predicts Flood of Legislation

The National Wholesale Grocers' Association has issued a special warning to members against an anticipated flood of legislation especially tending to fix prices or arbitrarily limit profits. Commenting on this and urging members to keep a sharp outlook, the circular of Secretary Toulme and Chairman F. R. Drake of the legislative committee, says in part:

"Forty State Legislatures are in session and thousands of bills, relating to all kinds of subjects, will be introduced during the season.

"From present indications, it seems that there will be introduced in many States bills which would give to certain commissions power to fix prices and margins of profits in the sale of commodities. Many of these bills were introduced during 1919 and 1920. From an economic standpoint, bills of this nature are unsound. They would tend to increase rather than decrease prices. They would make the particular state in which they are introduced a community unto itself, for certainly no manufacturer or distributor would ship into that State. They would tend to discourage merchants within the State—thus curtailing production, making 'long' the demand and 'short' the supply, with resultant increased prices to the public.

"Prices do not depend upon local conditions, and no State can of itself administer the distribution of its food products. There must be taken into consideration the condition of home and foreign markets. Federal regulations, utilitarian conditions, condition of the various means of transportation, and last, though not least, the immediate welfare of the commonwealth.

"Bills of this nature, if enacted, would paralyze the distribution of any but home-produced commodities, and would badly cripple the latter. They would be subversive of their very purpose, which is to safeguard the interests of the ultimate consumer. If commissions and boards appointed in the various States are to be given power to decide what they consider fair prices for commodities, there will surely be wide variations in the prices of these commodities throughout the country, resulting in endless confusion to merchants who conduct both an interstate and an intrastate business.

"It is most important that no committee of individuals or commissions, be given power to fix the percentage of profit that shall be made on commodities. If the merchant has no monopoly and acts independently of his competitors in making prices, he should be permitted to charge such prices as he deems proper, which would of course have to be the open market prices established by the laws of supply and demand. The National Association has always opposed unfair practices and

the taking of excessive profits. However, it is the consensus of opinion of those who have carefully studied our economic problems that the remedy does not lie in additional legislation or the promulgation of regulation."

### Cocoanut Importers Oppose Increase in Duty

Declaring that an increased duty of 2 cents per pound on shredded Ceylon cocoanut, as proposed by domestic manufacturers, would force their product from the market, in addition to creating a monopoly in this country, shredded cocoanut importers have filed a vigorous protest against enactment of what they termed "legislation at the expense of the public" with the Ways and Means Committee of Congress.

Leading importers of cocoanut state that the present tariff was sufficient to give the home industry all the protection needed; that instead of paying the high wages claimed to workers in their plants, only ordinary laborers were employed, and whose salaries were such that any other field would prove as profitable, and that the public would be forced to take any quality of goods that the domestic manufacturers see fit to give them if foreign shredded cocoanut were kept out.

On the other hand, the domestic producers of shredded cocoanut declare that it is not their purpose to keep out Ceylon shredded cocoanut by an additional tariff, but that it is absolutely necessary to obtain an increased duty in order to continue business. Unless they are given conditions at least equal to foreign competitors, they assert, the domestic industry might as well close its doors. They point out that even with a new duty granted, as asked for, this would more than be offset by the thousands of dollars in sanitary equipment used by American manufacturers, the expense of cleanliness and the vastly higher wages paid the American workman in comparison to that paid the native workman in Ceylon.

### Trade Commission's Position on Price Guarantees

The Federal Trade Commission today made the following announcement with respect to guarantee against decline:

"The Commission received so many complaints about the practice of manufacturers in guaranteeing commodities in the hands of wholesalers, against decline in price, that an extensive inquiry was made, resulting in expressions from more than three hundred and fifty manufacturing and selling concerns including associations whose trade represented membership must be more than double the number of individual statements. From the scope of the inquiry and the number and variety of replies, the results shown may be taken to be fairly representative of the difference in business opinion on this subject.

"The Federal Trade Commission, therefore, will consider each case of complaint of this character upon the facts shown in the specific case, apply cream and milk is taxable. It does hold the legal tests thereto, without either approval nor disapproval of the economic soundness of the arguments advanced before the commission for and against this practice.

### Hearing on "Adulterated Butter" February 25

Representatives of the adulterated butter, pure butter and oleomargarine interests will be given a hearing before Commissioner of Internal Revenue William M. Williams, February 25, at 10 a. m., on the recent decision of the Attorney General, relative to the taxability of adulterated butter. Information reaching the Commissioner is that there is an impression in the minds of many persons concerned that it is proposed to levy a tax of ten cents per pound on butter made from "sour cream and milk".

The Attorney General's decision does not hold that butter made from sour cream and milk is taxable. It does hold that "a grade of butter produced from decomposed or rancid cream, which has been neutralized with chemicals before churning, or from cream which is high in acid and has a bad odor, and which has been neutralized with chemicals before churning, is adulterated butter, and is subject to a tax as such at the rate of ten cents per pound, under Section 4 of the Act of 1902."

The effective date of the Treasury decision issued in accordance with this opinion has been postponed from February 1, to April 1, to permit of the hearing.

Dairy associations will make a united effort to obtain modification of the recent ruling of Attorney General Palmer, fixing the meaning of "adulterated butter."

They will ask for an exception to be made in the case of butter produced from cream which is "high in acid" and has a bad odor, etc., and will ask that the words quoted be struck out. The Attorney General's opinion hinged on two questions propounded by the internal revenue collector through the Secretary of the Treasury.

(1) Is a grade of butter produced from **decomposed** or rancid cream, which has been neutralized with chemicals before churning, adulterated butter within the meaning of Section 4, Act of May 9, 1902, and therefore, taxable as such, and

(2) Is a grade of butter produced from cream which is **high in acid** and has a bad odor, and which has been neutralized with chemicals before churning, adulterated butter within the meaning of Section 4, Act of May 9, 1902, and, therefore, taxable as such?

Both these questions were answered by saying that they constituted adulterated butter. The dairymen say that the expression "high in acid" makes an unfair classification.

It is announced that the enforcement of the tax imposed on adulterated butter under the ruling has been postponed until April 1, pending the hearing set for February 25.

### Appointed Selling Agent

Arthur F. Wille Company of Syracuse was recently appointed selling agent by the California Packing Corporation for their C. F. C. A. and Alaska Packers' Association units. Its territory is from and including Rochester east to the metropolitan district. This business will be handled through the company's three offices in Syracuse, Albany and Rochester.



## Unjustly Accusing the Specialty Manufacturer

(From New York Journal of Commerce)

There is something eminently unfair to the breakfast food manufacturers in the observation contained in a report of the Massachusetts Special Commission on the Necessaries of Life, when it says:

Notwithstanding the reduction in price of grains, there has been no reduction in the price of breakfast foods in packages. These prices are maintained at the highest point in spite of agitation. Dealers now report a declining demand \* \* \* The custom of price fixing on food products may bring about another strike on the part of the public.

Without the slightest disposition to defend price fixing or the maintenance of high levels of price, the selection of a specialty for an observation like this is neither fair to the specialty manufacturers nor a truthful basis on which the consumers should form their opinions.

As a matter of fact the specialty is not, never was, never will be a "necessary of life," and specialty men rarely, if ever, have so represented it. It is frankly presented as a high grade product, presumably made of selected materials and more or less elaborately manufactured. It carries with it the guarantee of its permanence and reliability, and if the consumer does not care to buy the specialty he is under no compulsion to do so, because most specialties are practically duplicated in bulk products not carrying an identifying brand name.

### Specialty Men and War Boosting

To accuse specialty manufacturers of unnecessarily advancing prices is quite unfair because it does not take into consideration the fact that during a large part of the war specialty manufacturers were struggling at their own sacrifice to keep the price of their products down. Stability of price is a large asset to specialty manufacturers; they very much dislike to either advance or reduce an established price; it upsets all their calculations as well as those of the distributors. For this reason prices on specialties are usually set on a fair average which will take care of sharp advances in raw material as well as reasonable declines.

In many specialties the raw material is by no means the dominant factor of price; manufacturing costs, sales expense, advertising, packaging and maintained profits being quite as important as the cost of raw material. In the early part of the war when bulk products, especially grains, were "kiting" to dizzy heights specialty men took their losses in the hope that the increase in their materials was temporary. In the long run it continued sufficiently to require them to either advance prices or reduce the size of the package, but neither of these was a popular move. The declines in bulk materials in recent months have been so precipitous that few manufacturers of specialties could think of prudently reducing costs until raw materials had struck a fair and permanent level, which could be depended upon for months ahead. A rapid decline would be unfair to the trade and perhaps offer false hope to the consumer.

Specialties are not creatures of the moment and sales campaigns are not

based upon rapid fluctuations, nor expenses of advertising policy and sales methods, but rather upon definite principles looking toward continuity and stability. Besides, raw material is stocked far ahead of actual uses. Even if food manufacturers were guilty of the things charged, they would be far more mindful of "a reported declining demand" than they would of a few cents to be added to or taken from the price. When demand for any food product, bulk or specialty, ceases or shows decline, prudent business men as a rule recognize that a period of real danger is at hand.

## Minnesota Bill Requires Beverage License Fee

A bill has been introduced in the Minnesota Legislature which provides that any person manufacturing, selling or distributing any carbonated or still beverages in bottles or other containers shall obtain a license from the dairy and food commissioner. The license fee is \$25 per year.

Section 4 of the bill defines "carbonated or still beverages" and reads as follows:

A "Carbonated or Still Beverage" within the meaning of this act, shall be a beverage made of pure cane or beet sugar, or of such harmless substitutes for sugar as may be permitted by the laws of this State, with pure flavoring materials, with or without fruit acids and coloring materials, and the finished product shall contain not less than seven per centum of sugar and less than one-half of one per centum of alcohol by volume. The term "Carbonated or Still Beverage" shall include mineral and spring waters, and the beverage commonly known as soft drinks such as soda water, ginger ale, root beer, artificial or imitation ciders, nectars, etc., but it shall not include malt or cereal beverages, fruit juices or apple cider. All carbonated or still beverages not conforming to the requirements of this act or the Minnesota Dairy and Food Law shall be deemed adulterated, and are hereby prohibited.

The above definition would probably exclude the use of saccharin.

Section 6 provides as follows:

The receptacles containing such beverages shall plainly bear the names of the manufacturer and of the product and the volume of the contents; and if an artificial or imitation product, then the word artificial or imitation shall plainly appear upon the bottle, crown, cork or label.

## Dehydrated Pumpkin Flour on the Market

The Caladero Products Co., Atascadero, Calif., is placing on the market "Caladero" pumpkin flour, made from dehydrated pumpkins, ground and bolted into flour. It is used for making pumpkin pies, the usual ingredients being added as with canned pumpkin. The advertising campaign has been placed in the hands of the H. K. McCann Company, San Francisco, which will first try-out the product in Chicago, where a thirteen-week will be inaugurated about February 1. Chicago newspapers and billboards will be used, and in addition advertisements are being run in several of the women's magazines. A corps of specialty salesmen will work the jobbing and retail trade of Chicago.

"Caladero" pumpkin flour is packed in half-pound canisters, twenty-four to the case. There is a profit to the retailer of about twenty-five per cent. The product sells to the retailer at fifty cents. Every case of twenty-four cans will contain a window card in colors, size 11x14 inches.

## Canadian Starch and Glucose Industry

The starch and glucose industry in Canada embraced 12 establishments in 1918, and the same number in 1917. The value of the total assets of the industry increased from \$3,670,806 in 1917 to \$3,784,664 in 1918, or 3 per cent. Included in this total is the value of lands, buildings, fixtures, machinery, tools, materials on hand, stocks in process, finished products, fuel, and miscellaneous supplies, which decreased from \$3,218,216 in 1917 to \$3,112,311 in 1918. This leaves the increase in the cash and trading accounts at \$219,763, or 48.5 per cent.

In 1917 there were 76 salaried employees in this industry, who received a total of \$92,312, of which \$48,865 was paid to managers. In 1918 there were 71 in this class, receiving in the aggregate \$98,595, managers receiving \$49,440. This gives a per capita payment to salaried employees of \$1,215 in 1917 and \$1,389 in 1918. The average number of wage earners employed increased from 615 in 1917 to 633 in 1918; the total payment in wages rose from \$428,723 in 1917 to \$541,550 in 1918, or a per capita rating of \$697 in 1917 and \$856 in the succeeding year.

Miscellaneous expenses other than fuel, labor and raw materials, chargeable against manufacturing operations, rose from \$268,938 in 1917 to \$339,763 in 1918.

Approximately \$5,000,000 worth of raw materials was consumed by the industry in 1918, the chief items being:

Corn (139,974,408 pounds).....	\$3,858,312
Potatoes (9,923,279 pounds).....	106,064
Cornstarch (503,950 pounds)....	32,495
Sugar and sirup for mixing (1,657,082 pounds) .....	113,399
Containers of all kinds.....	750,560
Chemicals .....	44,763
All other miscellaneous materials..	87,112

Total .....\$4,992,705

Cornstarch was used in one factory to make dextrin exclusively, but in three other plants it was used for the manufacture of both glucose and dextrin, so that it is not possible to determine the amount of starch utilized in manufacture of either of these products. The principal commodity in the item "chemicals" is hydrochloric acid, which is used principally for the manufacture of glucose by the hydrolysis of starch.

The industry's output in 1918 was valued (at the factory) at \$7,620,864, starch of various kinds and glucose forming \$6,327,515 of this total, as the following table shows:

Products	Quantity	Value
Corn starch, lbs....	19,041,506	\$1,445,324
Laundry starch, lbs..	4,820,377	391,456
Potato starch, lbs....	2,055,472	177,353
Chinese starch, lb..	1,263,227	122,284
Glucose (including all sirups), lbs....	68,803,113	4,191,098
Grape sugar, lbs....	688,378	37,392
Corn oil, gals.....	242,451	404,659
Stock feed, tons....	14,510	796,349
Dextrin, lbs.....	655,070	54,949

Total ..... 7,620,864

### A. H. Deute Appointed Borden Sales Manager

A. H. Deute, who for the last year has been advertising manager of the Borden Company, New York, condensed milk, malted milk, etc., was appointed general sales manager on February 1. Before going to the Borden company a year ago, Mr. Deute was sales manager of the Vogan Candy Company, Portland, Ore.



## Cheese Production in U. S. Increasing

### Many Foreign Types Now Successfully Made Here and Exported

One of the results of the world war has been the rapid advance made by the cheese industry—in the United States and the successful production of all the popular foreign types. Domestic cheese making has improved to such an extent since 1914, that the foreign varieties are losing their American market prestige. The American public has found the Roquefort, Camembert, Swiss, Gouda and Edam cheese made in their own country equal to the imported in every way.

Instead of importing heavy quantities of this product as heretofore, the United States now exports large amounts to the various world markets, and it is said that some shipments are carried to the very centers formerly famed for producing certain types. American Swiss cheese for Switzerland sounds odd, but it is a fact that a considerable amount was sent last year into that country. Italian cheeses, made in Wisconsin are now being sent to Italy, while New York State camembert is going to France and her colonies.

"Cheese making in the United States followed immigration," said J. L. Kraft, head of one of the large Western cheese concerns, "and at first depended on the memory and skill of the individual emigrant cheese maker, but has now developed into a large systematic production of an uniformly high quality of foreign cheese types.

"It has been partly the demand from other countries for types obtained elsewhere; partly the outgrowth of a desire to manufacture good things met in foreign travel and partly by the desire of emigrant people to carry with them the arts of their ancestral home that has led to the making of foreign cheese types in the United States.

"Expert makers from Europe when making cheese in this country have in consequence of their success developed some national types to a commendable degree. The first type to be made here was the so-called "Cheddar," which gained its name from the village of Cheddar, in the western part of England, where it originated. This is now a standard product of the farm dairy, and though still known by its original name it has also gained the name of "American" and "Full Cream."

#### Swiss Cheese Manufacture

"Of these so-called foreign types made in America, one known as "Swiss," similar to the Emmentaler or Gruyere, native to Switzerland, is the acknowledged leader. For a number of years Swiss makers in America have been making Swiss cheese with creditable success. Their best product cannot be distinguished from the product of Switzerland. American 'Swiss' is mostly made in the State of Wisconsin, while Ohio, New York and Pennsylvania produce the remainder.

"Practically all Swiss cheese is known as 'full fat.' The term full fat, however, as it applies to Swiss cheese, does not mean that it is as fat as Cheddar

cheese, for milk with a little less fat is used because too rich a cheese does not permit the development of the 'eyes' or holes peculiar to this type. These eyes are developed by fermentation which takes place during the first four to eight weeks of the ripening process. During this time the cheese must be handled skillfully or the eyes will not develop, with the consequence that the cheese will not bring the highest market price.

"Swiss cheese is graded according to the eyes and flavor. The flavor being equal the grades would be "fancy large eyed," "well eyed," "small eyed" and "blind," each one just as good as the other when food value is considered. The market in the United States demands cheese with "eyes," and in order to procure it pays prices out of proportion with the price of the other grades, and for export it is seldom easy to obtain anything better than medium eyed cheese at a price that is acceptable. Small eyed and blind cheese is always more plentiful. Summer or early fall Swiss cheese is best for export. It should not be shipped until it is at least five or six months old, a ripening period that is necessary to develop a good, solid, well ripened cheese.

"In the making of Roquefort, American cheese producers encountered the greatest difficulty in developing the green mold peculiar to this type, owing to the absence of the cool, damp climatic conditions of the caves in Southern France where it was originally produced. From five to six months are required to develop this mold under proper conditions. During this period, as fast as the mold gathers layers of curds are added until the cheese is perfected. This gives it the streaks of green seen in the high grades of imported Roquefort. The green mold and ripening process is now successfully applied to cheese of American manufacture on a large scale.

#### Foreign Types Reproduced

"The Camembert, Brie and other of France meet with a good demand and have an important place. Limburger, which was first made in the province of Lüttich, Belgium, is made in large quantities and is popular. Several Italian varieties, such as Reggiano, Caciocavallo and one similar to Romano, take care of the Italian trade which is large in some centers of population. Imports from Italy have practically stopped, and this has caused a heavy demand on the home manufacturer as well as the South American producer. An excellent quality of cheese closely resembling the Italian types is now being made in Argentine, and imported here in large quantities.

"The Gouda and Edam of Holland are types of recent development, and large quantities are being made for export and home consumption. Greek types known as Kose and Feta, Scandinavian types such as Mysost and Kuminost, and several others of a national type. Distinct from the Cheddar and foreign types, which I have mentioned, there are a number of strictly American origin. More than 100 different kinds have put up in various sizes of small packages to retail at popular prices. Some of them are made directly from the milk, according to a special formula. Others are made from the Cheddar or other bulk types by remak-

ing, or by processing one kind alone, or by blending one kind with another.

"These are wrapped in tinfoil or parchment paper or packed in tins, opal jars, wood boxes or paper boxes. Some are perishable and can be shipped only short distances. There are many centers of production for perishable types, while those that are not perishable are nationally advertised, and distributed from a central point. About half of the cheese dairies in the United States are now located in the State of Wisconsin and practically all are located where the average growing season is less than 155 days or where, although the season is cooler, the temperature is cool."

### Dairyman on Pacific Coast to Make Milk Products

According to reports from Seattle milk powder and special brands of dairy products will be produced in a new dairy industry for Western Washington by the cooperation of individual dairymen under auspices of the United Dairy Association of Washington. This announcement was made by J. A. Scollard of Chehalis, president of that organization recently. The project, which is now well under way, entails the expenditure of approximately \$1,000,000.

"The salvation of the dairy industry in this State depends on the success of the programme which the producing dairymen have launched," declared Mr. Scollard. "This is a program of co-operative manufacturing and marketing of products. More than \$1,000,000 is being expended in plants by the association, which has a membership of 6,000 dairymen in Whatcom, Skagit, Snohomish, King, Pierce, Lewis, Pacific and Grays Harbor counties. In practically all of these counties the dairymen have either acquired or are constructing factories for the conversion of milk and cream into a variety of products, some of which are new to the milk industry of the Northwest."

This project will entail a rigid system of milk inspection, sanitary methods of operation and complete laboratories maintained at all plants. A sales organization has been formed to handle all the manufactured products from the plants. This selling organization is known as the Consolidated Dairy Products Company, with a paid up capital of \$250,000. When all plants are producing a substantial volume the products will be marketed under the association brand, "Darigold," and nationwide advertising will boost this trade mark, he said.

#### Montana Food Brokers Organize

The Montana Grocery Brokers' Association was formed in Butte recently. The purpose of the new organization is to promote distribution of goods among grocery concerns of the state.

Frank H. Cooney of Missoula, head of the Cooney Brokerage Company, was elected president of the association. Thomas F. Casey of the Casey-Lamphier Company of Butte was elected vice-president; F. S. Decker of Decker Bros., Butte, secretary-treasurer. The executive committee is composed of F. H. Cooney, T. F. Casey, F. S. Decker, G. J. Cottingham of Helena, Martin O'Neill and George Lounsbery.



Italy as a Purchaser of Cottonseed Oil

Cottonseed oil has long been a commodity of special importance among Italy's imports from the United States and was one of the articles for which preferential tariff treatment on the part of Italy was provided by the commercial treaty between the United States and Italy which became effective on July 1, 1920. Paradoxical at it may seem, Italy formerly the principal source of supply for the olive oil imported into the United States, has always been a large purchaser of American cottonseed oil. The following table gives the quantity and value of the cottonseed oil imported by Italy from 1910 to May 1, 1920, the United States having furnished in each instance practically the entire amount (1 metric ton—2,204.6 pounds; 1 lira—normally \$0.193):

Years	Metricktons	Lire
1910.....	3,580.1	3,580,100
1911.....	12,242.9	10,651,323
1912.....	18,328.6	15,579,310
1913.....	13,462.9	12,116,610
1914.....	2,388.2	2,340,436
1915.....	1,604.8	1,925,760
1916.....	493.6	937,840
1917.....	241.6	664,400
1918.....	15.0	55,500
1919.....	3,724.5	13,780,650
1920 a.....	4,558.2	16,865,340
a First 4 months		

It will be noted that during the European War imports were reduced to but a small fraction of the normal quantity, and in 1918 practically ceased. This condition, however, was the result of necessity rather than choice, and the Italians, to whom oil is almost as essential as bread, were obliged to radically limit their consumption. In 1918 Italy's output of olive oil was about 50 per cent. greater than the average, and since the embargo on exports was maintained the lack of cottonseed oil was not seriously felt. In 1919, however, the olive crop was a failure owing to the extreme lack of fertilizers, the shortage of labor, and unfavorable weather conditions, and the olive-oil production was far below the pre-war average. Imports of cottonseed oil were resumed, although by no means on the scale that formerly existed, and during the first four months of 1920 the quantity imported exceeded the total for the previous year; if the same rate is continued the total for the current year will exceed that for all previous years, except 1912.

That the consumption of oil in Italy has greatly increased during the past few years can readily be seen by adding to the production of olive oil, the imports both of olive oil and of cottonseed oil, and deducting the exports of the former. Below are given the figures for Italy's production, imports, and exports of olive oil from 1910 to 1919:

Edible Olive oil	Metric tons	Imports Metric tons	Exports Metric tons
1910,1911,1912	174,713	33,120.0	27,816.9
1913.....	191,620	2,086.6	22,340.3
1914.....	196,240	15,422.3	17,441.5
1915.....	166,540	8,166.1	26,559.8
1916.....	226,820	19,098.2	6,626.7
1917.....	232,650	9,997.4	1,222.9
1918.....	317,900	1,581.4	524.1
1919.....	125,510	6,883.6	1,092.1
a Average for the three years.			

In 1913, using the method indicated above, Italy's consumption of olive and cottonseed oil was 184,829.2 metric tons, while on the same basis consumption

in 1918 had increased to 318,972.3 tons. In 1919, owing to the small production in olive oil, the Italians simply had to go without, but there is every reason to believe that the figures for 1918 fairly indicate the demand, and that if olive oil is not available larger imports of cottonseed oil will be readily absorbed by the Italian market.

A comparison of the statistics covering imports of cocoanut and palm oil shows that Italy is consuming more of these oils than was the case before the war. Soya-bean oil is being introduced to some extent. A separate classification is not provided for the latter commodity, which is included in "Fixed oils not specified." However, the quantity of such oils which is being imported is far below the pre-war average, and there does not appear to be any substantial reason why Italy should not continue to purchase heavily of American cottonseed oil. At the present time the prohibitive high rate of dollar exchange makes it advantageous for Italy to reduce its imports from the United States to bare necessities. An increase in the shipments of cottonseed oil in 1920 has, however, taken place despite the exchange rate, and with an improvement in exchange a further increase in such trade ought to follow.

Group Plan of Grocery Sales Under Fire

Upon application for the issuance of a complaint, the Federal Trade Commission has, as required by law, the public interest appearing, cited Brothers-Law Company, Chicago, Ill., in complaint of unfair competition in the retail grocery trade.

The complaint is directed to the combination sales method of selling groceries by which a number of grocery items are grouped and sold in combination lots. Among the items going to make up lots advertised by respondent, some of the well-known articles, such as sugar and flour are offered far below their cost to respondent. For example, sugar was advertised at 3 cents a pound and flour at \$7.98 per barrel, when the sugar was costing \$27 a hundred pounds, and flour was costing \$15.60 a barrel. The articles were so grouped as to return a profit on the whole transaction, it being necessary for the purchaser to take the entire lot.

The company has forty days in which to answer averments that its advertisements in these combination sales was false and misleading, in that the public was lead to believe that respondents' groceries were being sold at wholesale prices, and at less prices than goods of its competitors.

George P. Chapman, who for the last seven years has been in advertising work for the Pillsbury Flour Mills Company, Minneapolis, has been appointed advertising manager of the John F. Jelke Company, Chicago, maker of margarine and shortenings.

Japanese Regulation for Canned Goods Packing

Japanese packers associations have passed a resolution fixing the weight of contents of tins in ounces, without exception, and standardizing the shape and size of all cans.

Fairbank's Appreciation of the Wholesaler

The N. K. Fairbank Company, maker of "Fairy" soap and "Gold Dust," in a letter to the wholesale grocery trade of the country some time ago announced that it contemplated no change in its distributing methods.

C. B. Stuart, vice-president of the company, has made public the following statement regarding this reiteration of its policy:

"The jobber has been one of the bulwarks of the grocery business for many years. The duties and functions of the jobber or wholesaler, and also of the manufacturer and retailer, are well defined and definitely established.

"We know, for example, that the science of business has found three factors to be essential in the distribution of goods through grocery channels. First comes the farmer, and the manufacturer, who produce and scientifically combine the raw materials. Then the wholesaler, who buys these products in large quantities and distributes them in smaller units over wide territories; and third the retailer, who supplies the ultimate consumer.

"You cannot eliminate one of these factors, without doing injury to either one or both of the others, directly or indirectly. Incidentally, you are sure to increase the cost of doing business. This would mean that the public eventually would have to shoulder the result in the shape of higher prices.

"If a manufacturer decides to sell direct to the retailer, and thereby eliminate the wholesaler, technically that manufacturer becomes a jobber. His own brands automatically become his 'private brands.' This in itself is enough to prevent competing jobbers from selling his products, because it has never been customary for one jobber to sell the private brands of another."

Seeking Support for Tea Campaign

Plans for an advertising campaign that will increase the consumption of tea in the United States were reported at the thirty-third annual meeting of the Tea Association of the United States. The meeting was held on January 20 in the association's New York headquarters.

This association has been considering a co-operative advertising campaign for some time. One of the members of its promotion council, R. L. Hecht, is now in the Far East arranging for the financial support by tea-producing countries of such a camptign. Mr. Hecht cabled from Batavia, Java, a short time ago that Java had agreed to contribute to the support of such a campaign. Java is the first country that has definitely signed an agreement pledging financial support. It is expected that China, Japan, Formosa, India and Celon will soon follow.

Atlantic & Pacific Tea Co. Sales

The Great Atlantic & Pacific Tea Co. reports that sales for the first ten months of the fiscal year ending December 31, 1920, were \$205,931,875, against \$158,965,169 for the same period of 1919, an increase of \$46,966,705.



## Packers Blame U. S. Government

### American Interests Abroad are Hurt They Say, by State Department

The attention of members of Congress was called by the Institute of American Meat Packers, through its Washington office, to proposals submitted to the British Parliament regarding the meat industry and said to be designed to restrain American packers from further extending their world trade.

The institute, in an open letter to Senators and Representatives transmitting copies of a report to Parliament by a subcommittee of the standing committee on trusts, says this report was a consequence of the deliberate circulation in foreign countries by the Federal Trade Commission of the commission's report on its investigation of the "Big Five" packers, conducted several years ago by direction of President Wilson.

It is charged by the institute that the trade commission not only furnished copies of its report to representatives here of foreign governments, but also asked the diplomatic bureau of the State Department to transmit copies of the report direct to those governments.

#### Foreign Cooperation Sought

The commission, it is charged further, sent to the diplomatic bureau a form letter to be used in transmitting the report, which said:

"There is enclosed herewith a copy of the summary of the report of the Federal Trade Commission on the meat industry which was recently released for publication by President Wilson and which may be of interest to your government."

"By this form letter," says the institute's communication, "President Wilson was made to extend the invitation to foreign governments to take the fundamental action which the commission said was necessary to prevent international control of meat products by the American packers."

The institute's letter goes on to say that members of Congress after reading the British committee's report, which quotes at great length from the trade commission report, "will appreciate the serious disaster which threatens the livestock industry of this country as a consequence of the deliberate circulation in foreign countries by the Federal Trade Commission of its false and unjust charges against the American packers."

#### New Packing Plant for Denver

The Mountain States Packing Company will build a new plant at Denver, Colo., next fall at an approximate cost of \$2,500,000. The plant will be built on a 50-acre site adjoining the Union Stockyards and will be connected with the stockyards by a viaduct. Negotiations are reported to be under way for the purchase of two packing plants in Denver, which, it is planned, will be consolidated with the new plant.

## Sardine Cannery Plan Advertising Campaign

Fish cannery of the San Pedro and Monterey Bay sections of California are planning a national advertising campaign to increase the consumption of California oval sardines.

The annual pack of ovals on the California coast averages at present about 800,000 cases, and the Monterey Bay and Southern California cannery who have studied the proposition believe that it can be increased to at least three or four million cases annually. They have the canneries and facilities for a very much larger pack of ovals than they are now producing and see no reason why they should not make greater use of their plants.

Negotiations leading up to cooperative financing of the campaign are at present in progress between the sardine cannery of the two sections of the California coast named.

The 1920 pack of California sardines in olive oil has been the lightest in a number of years, while the total pack of tuna on the California coast exceeds the 1919 production, according to Lee Dingee, sales manager for the C. E. Van Landingham Company, Los Angeles.

Mr. Dingee said that the sardine carryover is light, no ovals having been carried over in the southern part of the State. The new pack of tuna fish has also been well cleaned up. While the pack of white meat showed some increase, the pack of bluefin was short of 1919 by 100,000 cases.

He said the pack of white meat tuna approximated 365,000 cases in 1920. He gave the total bluefin pack as approximately 250,000 cases, the pack of striped tuna at about 35,000 and the output of Italian style tonno around 45,000 cases. While the 1920 pack of white meat tuna was in excess of the 1919 output, it was not equal to the tuna pack of 1917.

## British Columbia Salmon Pack Sells for \$15,000,000

British Columbia contributed 41 per cent of the total value of the fisheries of Canada in 1919, \$21,518,595, according to a consular report. This total surpassed that of Nova Scotia by \$7,056,275, and that of all the other Provinces combined by \$11,156,941. The year's increase for this Province is \$6,881,249. The value of plants, etc., is estimated at \$15,807,058, which employ 20,883 persons, and whose production for the fiscal year ended March 31, 1919, was valued at \$28,329,501. Practically 75 per cent of the 1919 salmon pack was shipped to Great Britain.

Salmon occupies a premier place in the fishing industry of this Province with its total of 1,525,030 hundredweight and a total value of \$10,919,959. Of this, 1,319,941 cases represent the product of the salmon canneries. Practically all grades of canned salmon, excepting a considerable proportion of the cheaper varieties, were sold for about \$15,000.000. Although the salmon pack of the last year was not so large as in 1918, when 1,616,157 cases were put down by the cannery, the value was greater owing to the increased prices and because more of the expensive grades, such as sockeye, were canned. The Skeena River had the best run of sockeye salmon known in that locality for more than a decade. The Skeena River canneries contributed 184,945 cases of the total sockeye salmon output of 369,445 cases. Unprecedented prices were paid the fishermen, and in January, 1920, at Pender Harbor, the red spring salmon was quoted at \$0.22 per pound.

The Arthur R. Maas Chemical Laboratories, Los Angeles, Calif., has published a booklet entitled, "Chemistry and You," which is for the purpose of acquainting possible clients with the service which this laboratory is capable of rendering. Although working in nearly all branches of chemical research, the Maas laboratory has done a great deal of work for various food manufacturers.

## MEAT PACKING OUTPUT IN AUSTRALIA

There were 13 establishments and 1,287 persons employed in Australia in connection with meat preserving during 1917-18. The following table shows the number of carcasses treated in establishments, dealing with meat by canning and chilling, at intervals since 1901:

Years	Meat preserving works		Refrigerating works	
	Cattle	Sheep and lambs	Meat tongues and sundries	Cattle Sheep and lambs
	Number	Number	Pounds	Number
1901.....	16,538	732,094	.....	18,195
1906.....	9,995	274,950	.....	5,352
1911.....	61,596	925,475	3,023,931	10,188
1912.....	50,941	616,435	2,301,418	11,552
1913.....	100,827	374,523	7,305,113	29,887
1914.....	103,778	415,397	7,356,501	53,605
1915-16.....	11,466	76,008	4,993,226	11,835
1916-17.....	25,963	28,474	686,652	27,977
1917-18.....	47,845	399,833	9,295,428	29,168

The output of tinned meat in 1917-18 was 18,795,194 pounds; sheep and ox tongues, 445,464; meat extract, 122,078 pounds; tallow, 65,803 hundredweight; fat bones, 58,675; dripping, 980 hundredweight; tinned rabbits, 2,056,286 pounds; hides, wool, skin and bones, valued at \$348,134; and manures, 18,474 hundredweight.



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## Development of Sugar Industry in Nicaragua

The great development in the sugar industry of Nicaragua during the war may be seen from the following table of exports for 1914, 1918, and 1919:

Destination	1914	1918	1919
United States .....	\$9,168	\$18	\$200,396
Italy .....	530		
Honduras .....	10,500	520	60,134
Panama .....		18,808	75,688
Canada .....		79,850	
Mexico .....		612,870	272,521
All other countries	27,150	10	56
Total .....	47,348	742,076	608,795

The total quantity exported in 1914 amounted to 1,560,341 pounds; in 1918 to 13,728,268 pounds; in 1919 to 8,463,758 pounds.

The total production of the country is normally somewhat over 30,000,000 pounds, the difference between the exports and this quantity being the domestic consumption. Sugar is now fourth in order of value of the exports of Nicaragua, having jumped in the last four years from less than 1 per cent. of the total exports to an average of 6 per cent. The Government encourages the exportation of sugar, placing no tax upon it, and specifying only that not in excess of 60 per cent. of the total production be exported. There is a tax for internal consumption, however, of \$0.50 per 100 pounds, which produces a revenue of \$40,000 to \$50,000 annually, which is devoted entirely to schools. The sugar used for the manufacture of aguardiente (native rum) comes under a different system of taxation, being a government monopoly.

The uses to which the sugar produced is put may be stated to be roughly as follows: 10,000,000 pounds for export (plantation white); 9,000,000 pounds for domestic consumption; 3,000,000 pounds for manufacture of panela (brown sugar used by Indians); 10,000,000 pounds for manufacture of aguardiente; total 32,000,000 pounds.

There are approximately 12,000 acres of sugar land under cultivation, principally in the Departments of Leon and Chinandega, which acreage is constantly increasing. In these two Departments there are still many thousands of acres suitable for sugar cultivation.

The average production throughout the country is about 20 tons of cane per acre, although there is some exceptional land that produces as high as 100 tons per acre under intensive cultivation. In the most modern plantations about 1 1-3 tons of centrifugal sugar are produced per acre. This, of course, varies greatly according to methods used and types of mills.

## Condition of German Sugar Industry

By Howard W. Adams, Representative of the Department of Commerce, Berlin

Germany is confronted with the problem of increasing its sugar production to meet domestic needs. In the sugar-production year 1919-20 there was a total of 269 sugar-beet mills in operation in Germany, as against 307 for 1918-19. Since the latter period 30 of the 307 mills referred to passed out of German jurisdiction along with those territories transferred from Germany under the treaty of Versailles.

The sugar beet production in Germany during the period 1919-20 only attained an average of 19 metric tons

per hectare (hectare—2.47 acres), the lowest average for many years. This diminished production is ascribed in part to the bad weather conditions existing at the time of planting and of the inadequate cultivation of the crops, due to the lack of labor and strikes. The first examination of the plants disclosed the fact that the average weight of the root was only 88 grams, as compared with the preceding year's weight of 173 grams, and a sugar content of 11.7 per cent. as against 12.4 per cent. for the preceding year. The final examination of the plants showed a somewhat increased average sugar content, but considerably smaller beets, namely 342 grams weight and 20.9 per cent. sugar content, as against 504 grams and 19.8 per cent., respectively, for the year previous. Then a further setback to production occurred in the form of frost, which set in just at harvest time and as a result prolonged the work of completing the harvest with an accompanying heavy loss of sugar.

The net sugar production for 1919-20 amounted to a total, in round numbers, of 733,000 tons of raw sugar, as compared with 1,346,000 tons produced in the preceding year. Consequently, the domestic production was inadequate to meet the country's needs, which during the preceding year amounted to about 1,000,000 tons. It therefore became necessary for Germany to import 57,000 tons of sugar, as compared with the 29,000 tons imported during the preceding year. The only thing that saved Germany from a heavier importation during the 1919-20 period was the supply of 216,000 tons which became available from the stocks of the preceding year.

At the beginning of the new sugar year Germany finds itself without available stocks of this commodity on hand. There is felt more than ever the pressing need of developing the sugar-beet cultivation and increasing production as far as possible. Conditions appear to be propitious for such a result. The cultivable acreage shows a slight increase—4 per cent.—over that of the preceding year, and the fields are reported to be in good condition. The question remains as to whether the sugar mills will receive supplies of coal adequate to their needs and whether strikes among the farm laborers will disturb cultivation.

### Canning Company Now Sells Direct

The Booth Packing Company, Baltimore, has announced that in the future it will go direct to the final consumer with all of its products, consisting of fruits, vegetables, catsup, oysters, peanut butter, jams and jellies. The broker, wholesale grocer and retailer will be eliminated.

### Almond Growers Open New York Sales Office

The California Almond Growers' Exchange has established a general Eastern sales office in New York. No advertising work will be undertaken by the new office. All policies of the exchange will be determined by the home office, at San Francisco.

## European Sugar Prospects

In a special overseas trade number the Stock Exchange Gazette (London) discusses the outlook for the sugar harvest of Europe at some length. In that journal's opinion several of the central European countries will be self-sustaining in the matter of sugar this season, though Germany has not yet reached that point, nor has France. England, of course, will be an importer, as no commercial supplies of sugar are produced in the United Kingdom. To quote the Gazette:

"In the beet countries of Europe there is every probability of increasing yields of sugar, but respecting cane sugar there is more uncertainty. German raw-sugar factories are fully occupied, and the quality of the harvested beet is stated to be, on average, better than last year. A yield of 22 to 23 million hundredweight of sugar appears certain—an increase of 6 to 7 millions over 1919. This yield, however, will not obviate the necessity of Germany continuing to import sugar for its own needs.

"In Australia also there is prospect of a good harvest, but here again, domestic requirements will not be satisfied without imports. In Czechoslovakia the harvest is estimated to reach 17 to 18 million hundredweight, a result which will permit between 9 and 10 millions being exported; it is stated that contracts for the sale are now being made. In Jugo-Slavia the government has established a monopoly for financial reasons and because of insufficient home production. Hungary anticipates an improved crop, which, however, will not obviate the necessity of imports.

"Poland should have 1 to 2 million hundredweight for export. In Scandinavian countries a sufficiency for domestic consumption is expected, but no surplus, and the same conditions apply to Holland and Belgium. The production of France is estimated to reach 6 million hundredweight, against 3 1-2 millions last year; France, however, requires 18 million hundredweight annually. Italy and Spain will produce enough for their needs.

"In England large contracts for cane sugar have been made, there has been a reduction in price, the retail sale of Government sugar has been extended, free sugar is allowed an open market, and control will probably cease at an early date."

## BRITISH REGISTER OF EXPORT MANUFACTURERS

The Federation of British Industries of 4-7 Red Lion Court, London, England, has recently published an export register, which is a comprehensive survey of the entire British industry. Included in the book are classified lists of manufacturers who specialize in export trade. One entire section is given to foodstuffs and liquors, the foodstuffs being further classified into flour milling, oat and barley milling, patent cereal foods, rice, starch, cocoa, chocolate, jam, vinegar, biscuits, sugar, tea and coffee, preserved foods and dried fruits. Companies are listed alphabetically with products made, addresses of offices and works and other information needed by the buyer.





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## PATENTS

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## Greek Production of Olives and Olive Oil

For the first time in five years conservative reports from the 14 olive-producing provinces of western Greece indicate a bumper crop. As this crop is what is termed a "big-year" crop, Greek producers expect to begin early in January to turn out olive oil in quantities that will admit of heavy exportation. The Greek Government has lifted the ban on olive-oil exports in several sections, and a general permission to export olive oil, olives, and black olives in brine is expected by the trade. The crop of Salona olives is reported as excellent in size and quality and as amounting to 10,000 tons. The Agrinion fruit has been damaged 50 per cent by weevils and equals 1,475 tons. The near-by region of Arta has reported the same total.

The by-product of pips and pulp is expected to amount to 24,750 tons. The price of pips and pulp, f. o. b. Patras, is estimated at approximately 122 drachmas a ton. The normal rate of the Greek drachma was \$1 to 5.1813 drachmas. The rate at this writing is 15 drachmas to \$1. The fluctuation of dollar quotations now affecting this market makes all price information untrustworthy and nothing but confirmed offers should be depended upon. The weevil damage, very large two years ago, has been confined this year to between 2 and 3 per cent, the smallest general average for 20 years.

### Ripe Olives Chief American Interest

Past American interest in the Greek olive supply has centered in the importation of black (thoroughly ripened) olives barreled in brine. The exportation to the United States in 1919 was 201,614 gallons. This crop is now estimated at 14,740 tons of a first-class article. Greece has never yet attempted to refine any large percentage of its crude olive-oil production. Italian and Spanish refineries have hitherto taken over most of it, and after refining, it has been reexported.

Statistics of exportations of olive oil and black olives in brine are as follows: Oil—1912, 4,000,000 gallons; 1918 and 1919, none. Olives in brine—1912, 47,000 gallons; 1918, 32,000 gallons; 1919, 45,700 gallons. The failure to export oil in 1918 and 1919 was due to Government prohibition. With a forecast of 9,113,400 gallons of crude olive oil of all grades, there may be expected approximately 9,000,000 gallons of exportable oil during 1921 and 1922. It should be borne in mind that this is a biennial crop. Thus, the bumper olive crop returns now available should furnish western Greece with a strong credit item in its international exchange.

### Direct Sales to United States

Hitherto Italy and Spain have bought between them 85 per cent. of the Greek olive-oil exports; but there have recently been inquiries from American olive-oil buyers, especially in grades for canning purposes. Indications are that in olive-oil products, as in currants, American buyers are disposed to buy direct from Greece, cleaning the currants and refining the olive oil, respectively, in place of paying middlemen's profits, as has been the case for the past 20 years.

The olive-oil production as returned from the various districts of western

Greece is as follows (1 oke—0.351 gallon):

	Okes.
Aetolia and Acarnania.....	1,500,000
Arta .....	1,000,000
Epirus .....	200,000
Ithaca .....	1,500,000
Cephalonia and Zante .....	4,000,000
Leucas .....	1,000,000
Corfu and Paxos .....	500,000
Livadia and Rahova .....	3,000,000
Trifyllia .....	2,000,000
Laconia .....	1,500,000
Argolis and Corinth .....	3,000,000
Achaia and Ellis .....	3,000,000
Cynouria .....	2,000,000
Kalamata .....	1,500,000
Total.....	25,700,000

## Recent Patents

The following patents of interest to readers of this journal recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trademark attorney, Continental Trust Building, Washington, D. C., at the rate of 20 cents each. State number of patent and name of inventor when ordering.

1,362,728. Process for making evaporated milk. Oliver W. Mojonier, Oak Park, Ill.

1,362,868. Process of treating fruit-juice. Maxwell O. Johnson, Waipio, Hawaii.

1,362,869. Process of making jelly. Maxwell O. Johnson, Waipio, Hawaii.

1,362,870. Process of making fruit syrup. Maxwell O. Johnson, Waipio, Hawaii.

1,363,193. Food preparation and process of making same. Frank E. Coombs, San Francisco, Cal.

1,363,505. Sausage stuffing and linking machine. Anton F. Grabowski, Chicago, Ill., assignor to Allbright-Nell Co., same place.

1,363,781. Apparatus for baking bread. Frederick C. Haller, Pittsburgh, Pa.

1,364,083. Machine for blanching nuts. Joseph M. Demerath, Rochester, N. Y., assigned to Roblin-Demerath Co., same place.

1,364,192. Process for making soluble chocolate. Jacob Friedman, New York, N. Y.

1,365,129. Fruit-cutting machine. table. David Low, San Jose, and William H. Gavin, Santa Clara, Cal., assignors to Pratt-Low Preserving Co., Santa Clara, Cal.

1,364,417. Desiccated casein precipitate. Paul W. Turney, Richmond, Va.

1,364,634. Corn-flakes and process of making same. Jonathan K. Lippen, Battle Creek, Mich., assignor to Postum Cereal Co., Wilmington, Del.

1,364,912. Process for treating rice and product thereof. Moses M. Baumgartner, Freeport, Ill.

1,365,000. Food product. Rex De O. McDill, Tampa, Fla.

1,365,001. Food product and process of making same. Rex De O. McDill, Tampa, Fla.

1,365,055. Process and apparatus for desiccating (milk). Irving S. Merrell, Syracuse, N. Y., assignor to Merrell-Soule Co., same place.

1,365,129. Fruit-cutting machine. Alexander F. Thornton, Los Angeles, Cal.

1,365,443. Method of making soluble coffee. Henry Anhaltzer, Pittsburgh, Pa.

1,365,575. Fish-dressing machine. Edward H. Waugh, Seattle, Wash., assignor to Smith Cannery Machines Co., same place.

## Southern Grocery Jobbers Propose Advertising

It is expected that a plan of advertising will come before the Southern Wholesale Grocers' Association when its convention is held next May. Harold H. G. Halsell, chairman of the publicity committee of the association, has urged the establishment of a \$1,000,000 fund to be used over a three-year period in advertising the functions of the wholesale grocer. Mr. Halsell said:

"The wholesale grocery business, one of the oldest and most honorable of industries, has as we know been from all sides unjustly assailed. Indeed, Mr. and Mrs. Average Man feel that the wholesale grocer is little less than a pirate and a footpad, and particularly since 1914 has this attitude been aggravated.

"The reasons are plain to us why this view is wrong, but right or wrong, it exists, and it will not be corrected until the wholesale grocer puts his case squarely before America.

"This attitude of the public is not surprising. For years, by the nature of his business, the wholesale grocer has lived apart from other men. His warehouse is usually remote from the busy retail section of his city.

"He does not know the man in the street nor does the man in the street know him. The wholesaler, it appears, has made no effort to lead unthinking Americans to understand his place in the economic scheme. In other words, he has been and he is, so far as his relation with the public goes, rocking along today after the fashion of twenty-five years ago."

## Allege Unfair Competition in Rendering Business

The Federal Trade Commission has issued an order that the United Rendering Company, M. L. Shoemaker & Co., Inc., the Berg Company, the D. B. Martin Company, Consolidated Dressed Beef Company and Baugh & Sons Company, all of Philadelphia, refrain from certain methods of competition in the rendering business.

The record in this case, it is stated, discloses that these companies, by their combined action, forced out of business a competitor in Trenton, N. J., who had invaded the Philadelphia district for the purchase of fats, bones and suet, the raw material used in the rendering business. This was accomplished through the payment by respondents of higher prices for raw material than the competitor was able to pay, such prices being higher than were warranted by trade conditions. The Commission found this practice of a number of companies combining to put a competitor out of business, by taking away his customers from whom he receives a supply of raw material through the payment of unwarranted high prices, to be an unfair method of competition.

The order requires the companies to cease engaging in a combination to suppress competition in the refining of animal fats by purchasing raw materials in and about Trenton, N. J., or elsewhere, at prices unwarranted by trade conditions, and so high as to be prohibitive to competitors in such districts.



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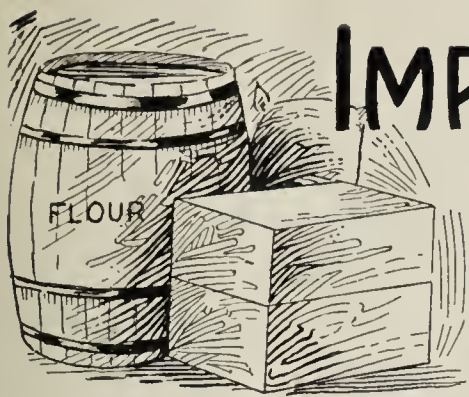
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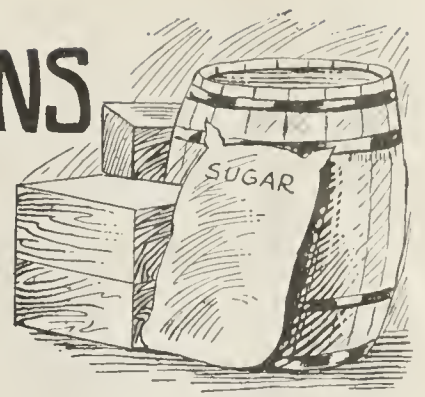
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## **Alimentary Paste Manufacturers' Association, Inc.**

Edward Vermeylen, Secretary, care A. Zerega's Sons, Consld., Brooklyn, N. Y.

## **American Association of the Baking Industry**

J. W. McClinton, Secretary, 1405 Ashland Block, Chicago, Ill.

## **American Association of Creamery Butter Manufacturers**

Prof. George L. McKay, Secretary, 208 South LaSalle St., Chicago, Ill.

## **American Association of Refrigeration**

J. F. Nickerson, Secretary, 5707 W. Lake St., Chicago, Ill.

## **American Bottlers of Carbonated Beverages**

James Vernor, Jr., President, 41 Woodward Ave., Detroit, Mich.; Junior Owens, Secretary, 726 Bond Building, Washington, D. C.

## **American Corn Millers' Federation**

T. M. Chivington, Secretary, 332 So. LaSalle St., Chicago, Ill.

## **American Chain of Warehouses, Inc.**

F. Rochambeau, General Representative, Beach and Varick Sts., New York City.

## **American Chemical Society**

Charles L. Parsons, Secretary, 1709 G St., N. W. Washington, D. C.

## **American Cranberry Growers' Association**

H. B. Scammell, Secretary, Tom's River, N. J.

## **American Fair Trade League (Price Maintenance)**

Edmond A. Whittier, Secretary, Fifth Avenue Bldg., New York City.

## **American Feed Manufacturers' Association**

L. F. Brown, Secretary, 53 W. Jackson Blvd., Chicago, Ill.

## **American Fruit and Vegetable Shippers' Association**

R. Cumming, Secretary, 1015 N. Clark St., Chicago, Ill.

## **American Grocers' Society, Inc.**

Lloyd Curtis, Secretary, East Orange, N. J.

## **American Home Economics Assn.**

Miss Cora Winchell, Secretary, Teachers College, New York City.

## **American Institute of Weights and Measures (Anti-Metric)**

C. C. Stutz, Secretary, 115 Broadway, New York City.

## **American Manufacturers Association of Products from Corn**

Dr. W. P. Cutler, Secretary, 208 South LaSalle St., Chicago, Ill.

## **American National Live Stock Association**

T. W. Tomlinson, Secretary, 515 Cooper Bldg., Denver, Colo.

## **American Paper and Pulp Association**

George W. Sission, Jr., President, Potsdam, N. Y.; Hugh P. Baker, Secretary, 18 East 41st St., New York City.

## **American Poultry Association**

E. B. Campbell, Secretary, Fort Wayne, Ind.

## **American Specialty Manufacturers' Association**

Fred Mason, President, Shredded Wheat Co., Niagara Falls, N. Y.; H. F. Thunhorst, Secretary, 299 Broadway, New York City.

## **American Spice Trade Association**

R. Eble, Secretary, New York, N. Y.

## **American Society of Refrigerating Engineers**

Wm. H. Ross, Secretary, 154 Nassau St., New York City.

## **American Warehousemen's Association**

Charles L. Criss, Secretary, 1206 Bessemer Bldg., Pittsburgh, Pa.

## **Biscuit and Cracker Manufacturers' Association**

Edward Griswold, Secretary, 90 W. Broadway, New York City.

## **Canning Machinery and Supplies Association**

J. A. Hanna, Secretary, Cadiz, Ohio.

## **Chain Store Grocers' Association of New York**

C. G. Lueder, Secretary, care Progressive Grocery Stores, Inc., 1881 Park Ave., New York City.

## **Dried Fruit Association of California**

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## **International Apple Shippers' Association**

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## Armour Sales in 1920 About Nine Hundred Million

Armour & Co. had gross sales of approximately \$900,000,000 during the fiscal year ending October 31, 1920, according to the report recently made by the president, J. Ogden Armour. The net income of the company for that year after charges and taxes, was \$5,319,975.

In his report, Mr. Armour says, in part:

"Conditions during the past year were such that doing business on a profitable basis was almost impossible. Declining prices, due to severe slackening of business, created the worst

situation we have ever had, and we are fortunate to have come through as well as we did.

"During the fiscal year 1920, Armour & Co.'s sales totaled approximately \$900,000,000. On that portion representing sales in and exports from this country, we sustained losses aggregating many millions of dollars. Our inability to prevent this loss should forever end the controversy as to wherein lies the price fixing power on packing house products.

"There is abundant reason to look forward to a better year. Closing inventories were most conservatively priced, which should tend to stimulate consumption of meat products. Coming months should show brisk business and satisfactory profits."

## National Biscuit Earnings Over Five Million Dollars

The report of the National Biscuit Company for last year shows net earnings, after taxes, amount to \$5,543,120.

The balance sheet of the company at the end of last year showed plants and the like carried at \$60,487,638, compared with \$55,955,020 in 1919, cash amounting to \$3,105,459, compared with \$2,164,971, while there was a decrease in the amount of United States government bonds and notes to \$2,538,155 from \$4,787,084 in the preceding year.

In his remarks to stockholders, Roy E. Tomlinson, president, said:

"The only indebtedness of the company is for raw materials and other incidental items, incurred so recently that the accounts could not be audited and paid before the close of the year.

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## NOTICE to Food Manufacturers and Distributors

**W**E shall be glad to furnish you with specific information regarding the value of our circulation for developing new business for you and strengthening your present markets. The American Food Journal is making for itself a unique place in the economic structure of food manufacture and distribution, and we are confident it will be to your advantage to be with us.

There will be no obligation connected with your inquiry, but we do seek opportunity of explaining our plans and pointing out just how we hope to serve you.

The American Food Journal

Feb. 15, 1921.



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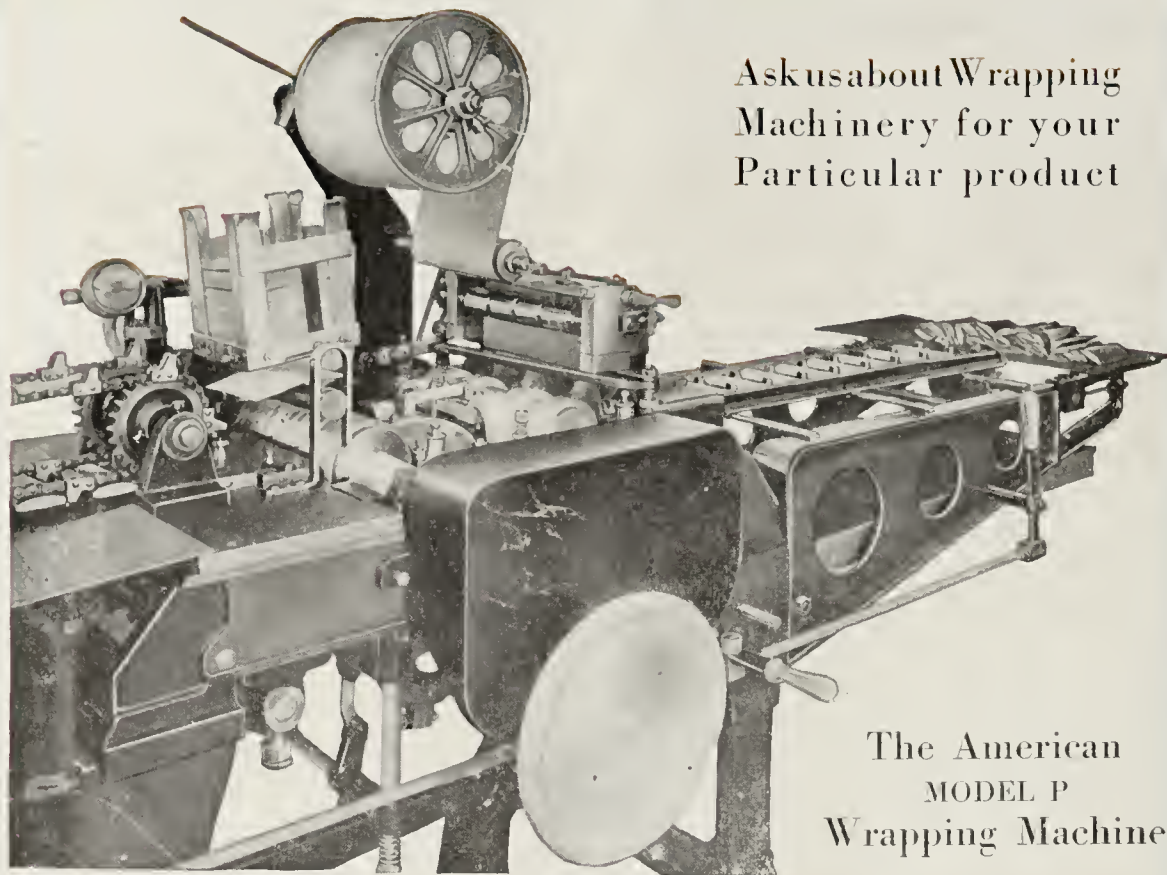
# The American Food Journal

The National Magazine of the Food Trades



HERBERT HOOVER, whose appointment as Secretary of Commerce of the United States comes simultaneously with the announcement of a \$709,000 gift by the Carnegie Foundation for a Food Research Institute which will probably bear Mr. Hoover's name. A statement by Mr. Hoover on World Food Problems appears in this issue.





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# The American Food Journal

The National Magazine of the Food Trades

Published Monthly at Rockville Centre, N. Y., by  
The American Food Journal, Inc.  
25 East Twenty-sixth Street, New York  
J. T. Emery, President

## The Editor's Column

### MANY THANKS FOR MANY KIND COMMENTS

The Editors of THE AMERICAN FOOD JOURNAL are grateful for many kind letters received approving of the policy of widened usefulness of this publication under its new ownership. A typical one is from one of the prominent canners, who says: "It strikes me that the new policy of your publication will find a quick response from the food manufacturers. I wish for your new program the full measure of success which it deserves."

### WHAT A WHOLESALE GROCER SAYS

One of the leading wholesale grocers of the United States writes us: "I am pleased to note that the articles which you run in THE AMERICAN FOOD JOURNAL are snappy, interesting and helpful to those engaged in the distribution of food products."

### FOOD RESEARCH INSTITUTE

The very thing which this publication is striving to promote, namely, the co-ordination of the scientific, economic manufacturing and distributive phases of the food question, is the purpose set forth by the Carnegie Foundation for the Food Research Institute, which has been founded upon the suggestion of Herbert Hoover, former Food Administrator. We hope that this publication may become a valuable aid in such work as the institute will attempt.

### SUGGESTIONS INVITED

We invite the suggestions of readers as to ways in which THE AMERICAN FOOD JOURNAL may become of greater and greater service to them. We all like bouquets, but brickbats are useful, too, sometimes. Address the Editor.

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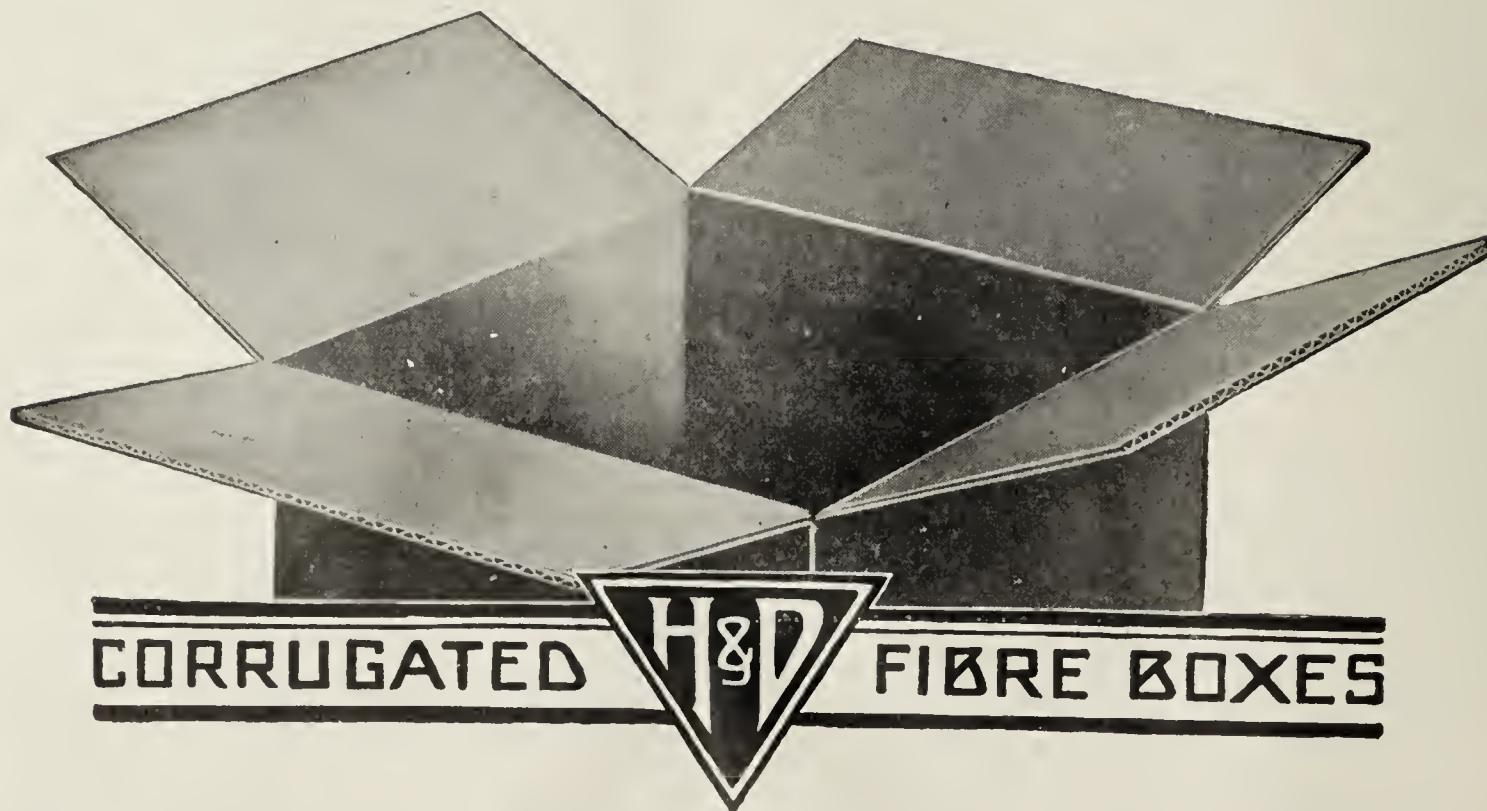
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# The American Food Journal

The National Magazine of the Food Trades

Vol. XVI

MARCH, 1921

No. 3

## Food Research Institute Founded by Carnegie Foundation

### May be Named After Herbert Hoover, Who Suggested It---\$700,000 Fund Provided

A FOOD Research Institute for the study of all problems of production, distribution and consumption is to be established at Leland Stanford Junior University at the suggestion of Herbert Hoover, with an endowment of \$700,000 provided by the Carnegie Corporation. This announcement was made at the headquarters by the corporation in New York.

"The need for such an institute was first suggested to the Carnegie Corporation by Herbert Hoover," said the announcement, "and the selection of Leland Stanford Junior University as its home was due in part to the fact that it is the point at which the great and unique collection of documentary material relative to the economic side of the war, gathered by Mr. Hoover during the war, is deposited.

"The value of such an institute as it is now proposed to establish also was emphasized by experience during the war, when the study of food supply in its different phases was necessary in order to attain maximum efficiency in the nutrition of the nations involved. The knowledge thus acquired clearly indicates the great importance of continued research effort. The general field of the institute will be the problems arising after food has left the farmer's hands.

#### Scientific Study of Food Distribution

"A special feature of the work of the institute will be the scientific study of the marketing and distribution of food products. The objects of the institute, however, are thoroughly practical, and will, it is hoped, contribute to the welfare of the producer and consumer by eliminating present wastes in the process of marketing nearly all kinds of food. The objects of the institute are not only important from the standpoint of the farmer and consumer, but have a direct effect on the question of proper nutrition for the nation.

"In every nation at war, and in neutral nations as well, much of the previous data of production, distribution and consumption of food was found to be inaccurate. Faced with the necessity of securing immediate results, Gov-

ernmental authorities in charge of food programs were frequently compelled to grope in the dark for long periods before they could accomplish the end sought.

"Under the terms of the agreement with Carnegie Corporation the university agrees to establish a research organization under the name of the Food Research Institute of Leland Stanford Junior University and to appoint three men of science to be known as directors of the institute. These directors will have authority to determine the scientific policies of the institute and the problems to be studied. It is the hope of the Carnegie Corporation that eventually the new organization will be known as the Hoover Institute.

#### Herbert Hoover to Serve on Advisory Committee

"There will also be an advisory committee made up of men of national prominence representing agricultural, consumer, economic and other groups of the community, one of whom will be Mr. Hoover. The university will appoint seven members of this body, who, with the president of the university ex officio and the president of the Carnegie Corporation ex officio, will make the committee number nine men. Each member will serve for a term of three years from the date of his appointment.

"The institute will begin its work on July 1 next, and the Carnegie Corporation will provide a fund of \$700,000 for its support for a period of ten years.

"James R. Angell, president of the Carnegie Corporation, who has just been called to the presidency of Yale University, announces that Leland Stanford Junior University has agreed to make its scientific laboratories available to the institute. It is not intended to duplicate the equipment of research laboratories working in the field of nutrition, but, so far as it is practicable, to have the institute co-operate with other agencies working in the general field.

"The directors to be appointed will head three separate divisions. One will be an expert in the field of physiology and chemistry of nutrition,



one an expert in economics and food distribution, and one an expert in the chemistry of food manufacture and agriculture. They will work co-operatively from three avenues of approach upon fundamental issues of widest human significance. It is also provided that the institute may receive from time to time such specially qualified students as it may be possible to instruct without disadvantage to the primary research purposes of the organization.

"A small group of fellowships will be available for graduate students of high intellectual promise. These students will receive wholly unusual training for public service while at the same time contributing valuable assistance to the work of the institute.

"The Carnegie Corporation, after the institute is once established, will abstain entirely from any attempt to direct or control its work."

## A Statement by Herbert Hoover ON WORLD FOOD PROBLEMS

*Herbert Hoover in an authorized interview has outlined a plan for intensive study of the problems of production, distribution and consumption of food.*

*The occasion for his statement arose from the recent announcement that Carnegie Corporation of New York had entered into an agreement with Leland Stanford, Jr. University of California by which a Food Research Institute is to be established at the university.*

*It was Mr. Hoover who first suggested such an institute to Carnegie Corporation, and the choice of the university for its home was due in part to the fact that Leland Stanford, Jr. has received the great collection of documentary material relative to the economic side of the war which the former Food Administrator gathered during the war.*

*In his interview, which follows, Mr. Hoover described specific ways in which a scientific and comprehensive study of the food question could be conducted with an aim toward practical results.*

*The New Food Research Institute will devote itself to the investigation and illumination of facts in three principal directions:*

*First. The distribution system—the economic side.*

*Second. The chemistry of food manufacturing processes—the chemical side.*

*Third. The production and agricultural side of foods.*

SOME of the problems to be studied appertain to milk, the price margin between producer and consumer, determination of a basic standard of living, cost of producing agricultural commodities, and world aspects of the food supply.

The milk problem is a subject of first grade importance in public health. In China the woman nurses the child until it is three or four years old, and then transfers it to the general diet of the community. In this country the child is weaned before it is a year old, and becomes dependent upon the domesticated cow, to a greater or less extent, until maturity is attained.

### The Milk Problem

With the development of urbanization, the dependence of the child upon the cow becomes more and more difficult to maintain. The per capita consumption of milk in cities falls. The

more intense the struggle for existence, the lower the milk supply of the industrial classes. The substitutions of other foodstuffs for milk, and the results thereof, are important problems.

It will be necessary, in the first place, to make a comprehensive study of milk production, from the standpoint of agriculture and economics. One such investigation for one small area was carried out during the war by the Tri-State Milk Commission, whose sittings have already been suspended. Otherwise, in every section of the country, the determining of the price of milk was a compromise, not a decision.

The production of milk is particularly exposed to the operations of the law of diminishing returns, and is very sensitive to advances in the price of land. The present situation has been complicated by an abnormal development of manufactured dairy commodities, the result of the war. The country can be divided into zones of primary and secondary milk production, zones that produce greatly in excess of their needs, zones that approximately cover their requirements, and zones of deficiency that must be supplied from other areas.

### Accurate Statistics Needed

The total production of milk, the manufacture of butter, cheese and condensed milk, the utilization of skimmed milk, the shipment of fluid milk, and the storage of milk products in refrigerators can be accurately tabulated and analyzed. Through special investigations carried on with the aid of country agents in selected portions of the different zones, the cost of milk production for the different purposes can be determined.

The transportation and distribution of fluid milk to the cities will require a second set of surveys, and the influence of the consumption of milk products on the use of fluid milk would constitute the subject of a third set. Finally, proceeding from the standpoint of the consumer, surveys could be carried on in cities of various sizes, to determine the ultimate destination of fluid milk and milk products.

Reciprocal thereto, surveys in the congested areas of cities would determine substitution of other goods for milk and dairy products and the resultant influences upon growth and health.



For such an investigation the agencies and data may be said to be almost non-existent, and the organization of the work will be as new as the problem is intricate. The subject is a problem of first-grade importance in public health.

### **Producer and Consumer**

During the war, we knew the spread in the price of every article of food from producer to consumer, and we could divide the spread into the several fractions and factors. No such information exists for the present prices, and about this lack of information, or misinformation, rage the fiercest contentions. The spread is different for each foodstuff and must be investigated separately.

For such investigations it is necessary to collect the data, beginning with the sale upon the farm and ending on the table of the consumer. Government reports in nation and state, railway records, trade journals, reports of mills and factories, and records of sales constitute the basic data. These, however, must be supplemented and interpreted on the basis of surveys at the sources and in connection with the several steps of manufacture, transportation and transfer.

The present wholesale index numbers are in part antiquated, in part erroneous and in part based upon different criteria, as employed by different organizations. We had devised in the Food Administration in Washington, a new system of wholesale index numbers for foodstuffs. These should be resumed and elaborated.

Whether the spread can be controlled, or ought to be controlled, is one thing; to be evaluated and analyzed is another thing. And the latter constitutes a practicable subject of investigation. The problems of marketing are indissolubly connected with the problems of spread.

### **Basic Standard of Living**

In numerous discussions dealing with the uses made of wage, salary and income by different classes during the past few years, writers have lamented the lack of index numbers of consumption, corresponding to index numbers of price that are widely employed in trade and industry. During the war a beginning was made in the study of co-efficients of consumption as being essential, semi-essential, and non-essential, the Food Administration co-operating with the War Trade Board and the War Industries Board.

The practicable study of the problem has two aspects. In the first place, a commodity must be traced to its end-products, the ultimate states in which it is consumed. In order to do this properly for foodstuffs, similar investigations would have to be carried out for certain other commodities, for example, the fibres and other raw materials that have close relations with foodstuffs.

How little we know of the ultimate destinations of even a simple primary crop, like wheat, is shown by the fact that during the period of careful control by the Food Administration, we lost account in one year of some 30,000,000 bushels reported in the crop.

Tracing raw products through their various

ramifications to the final states of consumption requires surveys of the various manufacturing trades. Leading men in the trades have indeed repeatedly expressed their regret that the study of these processes had been discontinued.

The second aspect in the investigation is revealed from the side of the consumer. The population in zones would be divided into income groups, occupation groups and family groups, in such a representative manner in city and country districts as to present weighted averages of the population. The surveys would then determine the disposition of incomes throughout the year and the consumption of various commodities, in unit terms of commodities as well as of price. Thus one could contrast production and consumption in units of commodities, whether of weight or yard or cubic, with consumption in units of price.

From the results of such surveys, statistical method would be able to erect co-efficients of the standard of living. These could be compared between zones, classes and states; and could be contrasted with similar investigations now being carried on in several European countries. The plane of the standard of living, and shiftings of the plane, could be quantitatively measured and expressed.

### **Cost of Production**

During the war we attempted to determine the cost of production of many basic commodities. The Wheat Fair Price Committee made a guess at the cost of wheat production, that represented a compromise of interests rather than an investigation. Approximations were also arrived at for rice, cotton-seed oil, and pork products; and a better-than-approximation determined for sugar.

Applied to a particular commodity like wheat that is at present very much in the public eye, the problem resolves itself not merely into the formulation of a cost-sheet, but also into a definition of the marginal acre and the scope of normalcy in the growing of this cereal. One must make a definition of the normal datum line in wheat acreage and fix the cost sheet within that acreage; and then determine for different increments of the marginal acreage, the cost of production.

The country would be divided into zones and these zones into counties. From the records of the national government, states, the counties, the state agricultural colleges, the experiment stations, the railways, the elevators, the mills, the grain exchanges and trade journals, the data of production would be obtained. Through special investigations conducted with county agents, the state agricultural colleges and the experiment stations, the various items in cost of production would be obtained for each county, state and zone.

### **Matter of Correct Analysis**

Success would be a matter of correct analysis, in accordance with engineering experience. At present, the public press displays great confusion on the subject, now much discussed on account of the falling price of wheat. The writer has discussed the subject within recent months with growers, experts of agricultural colleges



and experimental stations, commission merchants and millers in the two large wheat growing areas of our country. No one is able to make a computation as to the cost of production of wheat in the last crop, because no one has carried out the investigations upon which alone a cost sheet could be erected.

In a food-exporting nation, the price of the fraction consumed at home will be determined by the price at which the exportable surplus is sold abroad. In a food-importing nation, the price of the domestic foodstuff consumed at home will be determined by the price of the imported fraction obtained from abroad. This, of course, without regard to tariff or embargo.

In practice, however, and particularly under abnormal circumstances, the operations of these almost axiomatic principles depends upon a great many modifying influences and circumstances. A review of the development of our country during the past twenty years and the data of the recent census, indicates a pronounced tendency to urbanization, the expansion of city industries out of proportion to the development of agriculture. This has been exaggerated by the inflation of our manufacturing capacity that has resulted from the war.

#### Prospect of Food Importing

Apparently, we are to pass from a food-exporting to a food-importing nation. This transition may be analyzed from the point of view of the dollar, the calorie or the ton. The more available the data on conditions in competitive lands, the better for both city and country in the United States.

Our food supplies would be divided into primary and secondary commodities. The group of secondary foodstuffs would be divided into several rubrics. Our country would be divided into zones, in accordance with their production of foodstuffs of the different classes.

The food-exporting areas of the world would be classified on the basis of their relations to our production and consumption and to world trade. The food consuming nations would be classified on the basis of competition with us as consumers. Transportation conditions to and from each country would be measured and tabulated. An analysis would be made of the production and distribution of other basic materials and finished commodities, with which imported foodstuffs would be paid.

#### An International Survey

In the sessions of the League of Nations, they are discussing the international allocation of raw materials and foodstuffs. For such an allocation to be even considered, an international survey of the kind here proposed would be indispensable. If indispensable for the League of Nations, it ought to be equally indispensable for ourselves.

The data of production, consumption, distribution and exportation of the several foodstuffs concerned would be obtained from existing institutions, governmental or commercial, of all kinds whatsoever. These would need to be supplemented in many countries by special surveys on the basis of data secured at the source.

It was on the basis of such surveys that the food supplies of Europe were marshalled throughout the world during the war. The collection of this data in the future would be easier than before the war, on account of the establishment of connections in various countries.

## What is Bread?

### Tentative Definition Announced by Joint Committee on Definitions and Standards of Foods

A TENTATIVE definition of "Bread", "Wheat Bread," "White Bread" has been announced by the Joint Committee on Definitions and Standards of Foods, according to officials of the Bureau of Chemistry, United States Department of Agriculture, who are charged with the enforcement of the Federal Food and Drugs Act. Interested persons are invited to submit suggestions and criticisms of the tentative definition for the consideration of the committee when it meets for final action.

The text of the tentative definition as announced by the committee is as follows:

"*Bread, Wheat Bread, White Bread* is the clean, sound, sweet product obtained by baking in loaf form and at a temperature of 400 degrees to 500 degrees F. a dough consisting of a leavened and kneaded mixture of flour, potable water, edible fat or oil, sugar or other fermentable carbohydrate substance, salt and yeast, with or without the addition of milk or a milk product. It contains, one hour or more after baking, not more than 38 per cent of moisture, nor more than 1 per cent of salt, and its acidity does not exceed the equivalent of 3 cubic centimeters of normal alkali for 100 grams of bread.

"In the United States the name 'bread' unqualified, is understood to mean wheat bread or white bread. The dough of bread is also baked in the form of rolls and other units smaller than the loaf.

"*Milk Bread* is wheat bread in the manufacture of which the water ingredient has been replaced

The committee announces also that future consideration will be given to the questions involved in the use in bread-making of such additions as diastatic ferments, certain extracts or special preparations of grains, and salts used as yeast auxiliaries; also to those concerning minimum limitations for the proportions of protein and total ash. Suggestions for the proper designations of bread made, in whole or in part, with skim milk in place of water are desired by the committee.

The Joint Committee on Definitions and Standards is composed of three representatives from the United States Department of Agriculture, three from the Association of American Dairy Food and Drug Officials, and three from the Association of Official Agricultural Chemists. This committee recommends definitions and standards for foods to the respective associations and to the Department of Agriculture, which, when formally adopted are used to guide Federal and State officials in the enforcement of food laws.



# Planning A Marketing Campaign

## Various Factors to be Taken Into Consideration When Merchandising a Food Product

BY WILLIAM CRUGER CUSHMAN

The author of this article, William Cruger Cushman, New York, is widely known as a food merchandiser. With his brother, Townsend Cushman, he founded the Cushman Brothers Company, which was succeeded by Lamont, Corlies & Company, now one of the largest concerns of its kind in the United States. Later Mr. Cushman founded the Guanica Sugar Centrale in Porto Rico, and after disposing of his interests there, spent five years in England as selling agent for American products. Upon returning to the United States he became manager of the American branch of C. J. Van Houten & Zoon of Weesp, Holland (Van Houten's Cocoa). In this connection he remained for twelve years, during which period he increased the business of the New York branch about 400 per cent. Mr. Cushman is at present consultant in food merchandising problems, with particular reference to branded food specialties.

MANY manufacturers of branded food specialties who may be 100 per cent efficient in the manufacturing end of their business fall down on the marketing end. Frequently they fail to realize that each product which is put upon the market is more or less a law unto itself, and that a certain character of exploiting campaign conducted successfully on one specialty might prove to be an utter failure with another article of equal intrinsic merit. In other words, one product will lend itself to house-to-house canvassing; another to store demonstrations; another may call for detailed missionary work on the retail trade in behalf of the jobbers; with still another, a satisfactory trade may be built up by making exclusive buying agency arrangements with certain progressive jobbers in leading centres throughout the country, or by the appointment of manufacturers' agents; some products are helped greatly by a liberal distribution of samples, or by expensive display advertising matter, booklets, circulars, etc., whereas in some instances the benefit derived from such outlays may prove to be very inadequate as compared with the expense involved and results attained. In the instance of certain branded specialties, a combination of some of these various forms of exploitation may be the happy solution.

Then in the field of general publicity advertising, much misdirected energy and money may be expended. One article may lend itself to advertising in mediums of nation-wide circulation, whilst with another, local advertising in certain selected sections of territory may bring a much greater return for the amount expended. In this connection, a feature which is often overlooked, or at least studied too lightly by a manufacturer, is the tastes, appetites and absorptive capacity of any given section of the consuming public. One section demands a dark roast of coffee, another a light roast. It would seem obvious that a canner of celery would not waste much time or money in exploiting his product in Kalamazoo, or to push the sale of canned molasses in New Orleans, or for a manufacturer to advertise in and send salesmen to a mining town where the miners are on strike, or to a factory town where most of the factories are shut down, but tactical campaign blunders

of a character just about as pronounced as these are being made right along.

All of which emphasizes the vital importance of seeking the channels of least resistance and thus securing the maximum results at the minimum expenditure of time and money.

### Failure to Allow Sufficient Margins

We come now to what is perhaps the most common, yet most serious mistake that is made by manufacturers, especially by those who are just starting in to put out a new branded food specialty, and that is, failing to allow sufficient margins all along the line, from factory cost to price to consumer, to satisfactorily take care of each phase of the marketing campaign. A manufacturer will come out with, say, a 3 ounce package which he plans to have sold to the consumer for 10 cents. After spending a lot of time and money to popularize the product, he suddenly discovers that he is not making any money on it, as the marketing costs have pared down the margin of profit to the vanishing point. He is then confronted with certain unpleasant alternatives; one is to advance the price to 15 cents to the consumer, with a raise in price all along the line to the retailer and the jobber; or to keep the product at 10 cents, he must still raise his selling prices to the retailer and jobber, or if he maintains the same margins of profit to the trade, and still keeps the price at 10 cents to the consumer, he must cut down his marketing cost; or he must work out substantial reductions in his manufacturing cost.

In the instance of the first alternative, i.e., advancing the price to 15 cents to the consumer, this is apt to antagonize the latter, especially where there cannot be shown any advance in the cost of the raw materials entering into the product to justify the increase in price to the consumer. In the instance of the second alternative, i.e., keeping the price at 10 cents to the consumer but reducing the margin of profit to the retailer and the jobber, this is bound to disgruntle the trade, and stifle any interest that might have been shown in pushing the product. In the instance of the third alternative, i.e., cutting down the marketing cost, this means a curtailment of publicity work either in general advertising or dissem-



ination of advertising matter, or reducing the selling staff, or hiring cheaper men, or the lowering of the efficiency of the marketing campaign in one way or another; but whatever the form, it is bound to stultify the demand and lead to a speedy shrinkage of the business. In the instance of the fourth alternative, i.e., reducing the manufacturing cost, it is fair to assume that the manufacturer has already worked out approximately irreducible minimums, based on a given volume of output and the maintenance of a certain standard of quality. To reduce the quality is admittedly a suicidal policy; to cheapen the package itself is certainly harmful. There is nothing left to do, then, but to cut down the size of the package; this, however, is about as unsatisfactory in its effect on the consumer as raising the price.

#### A Studied Analysis Necessary in Beginning

All of the foregoing unpleasant alternatives could have been avoided if in the first instance, the manufacturer had made a studied analysis of his marketing problems before launching his campaign. Barking up the wrong tree, and then climbing down again with torn trousers and bruised shins is an exemplification of "lost motion," and lost motion in business means lost time and lost money.

The most crucial feature in a manufacturer's analysis of his campaign, when starting out to market a branded food specialty, lies in his allowing a sufficient margin between his factory cost and the price at which his product can be sold freely and readily to the consumer. Many manufacturers may be familiar with the necessary margins of profit that must be accorded to the retailer and the jobber, but they slip up badly in their estimate of the selling cost. No matter how meritorious an article may be, and even though it can be put on the market and maintained there at somewhat less cost than certain other less appealing products, a general average prevails that is well above the percentage that is allotted by those manufacturers who have not passed through the acid test of frequent practical experience in the marketing of varying branded specialties.

With all the savings that can be effected by seeking the channels of least resistance, and by adopting the one particular character of marketing campaign that is best suited to the particular product that is to be exploited, the selling cost is bound to be one of the big factors to be reckoned with, with a tendency to be more rather than less than you reckoned. Whilst there is more than one way to skin a cat, as more than one way to work out a marketing problem, even the best way costs real money to get a given product established with the public, and sustained in their regard.

#### How to Figure Costs and Selling Prices

To put the foregoing into concrete form, if a manufacturer starts to put a branded food specialty on the market at a certain price to the consumer, he should figure that that article must not cost him to manufacture more than one-third of the price to the consumer. This is the way it works out when allowing

the essential margins, taking \$1 as the basic unit of price to the consumer:

Selling price to consumer.....	\$1.00
Retailer requires at least 25 per cent profit on his selling price, so it must be sold to him for.....	.75
Jobber requires at least 15 per cent profit on his selling price, so it must be sold to him for about.....	.64
Allowance for selling cost should be not less than 25 per cent of price to jobber. This may be worked out in any given allotment toward general publicity advertising, display matter, booklets, circulars, travelling salesmen, store demonstrations, house-to-house canvassing, or any other exploiting methods; but when the dust clears away, this approximate cost should be allotted. This brings us to	.48
Allow 2 per cent for jobbers discount, loss from bad debts, and the important item of freight, these items would probably figure out at around 10 per cent on the price to the jobber, or say 6 cents. This brings us down to	.42
Allow 20 per cent as a fair margin of profit for the manufacturer to make on the net price obtained (and that is only about 15 per cent on the price to the jobber) and we come to a manufacturing cost of slightly less than..	.34
which is about one-third the price to the consumer.	

Now, if the manufacturer's cost exceeds that percentage, and the price to the consumer cannot be consistently advanced, the logical deduction is to refrain from putting that particular product on the market, no matter how meritorious it may be intrinsically. There is no good accomplished in trying to drive water up hill, yet that is about what it amounts to where a manufacturer attempts to put a branded specialty on the market when inherent conditions foreshadow an unsuccessful campaign.

This is the first of a series of merchandising articles by Mr. Cushman. Others will follow in subsequent issues.

In nuts and dried fruits there were 1,962,203 kilos of almonds exported from Malaga, Spain, from January 1 to September 30, of which the United States received 679,678 kilos, and Great Britain 572,282. Out of a total export of 7,000,000 kilos of dried raisins, the United States received 4,439,248 kilos. Dried figs were exported to the amount of 2,265,430 kilos, the United States receiving 500,441 kilos, Great Britain 422,677, Belgium 267,785, the remainder being generally distributed.

The preserving and canning of fruit in Czechoslovakia was one of the few trades which the war enormously helped, as fruit was sent in large quantities to soldiers in the field and became one of the war staples. There are now about 400 factories producing all kinds of canned fruits in that country, particularly jams. In 1919 as many as 1,500 carloads of jams were made, for which 7,500 metric tons of sugar were used.



# Group Advertising for Food Products

## How Various Food Manufacturers Have Profitably Given Publicity to a Family of Specialties

THE group method of merchandising food products is receiving much attention these days from food manufacturers, according to G. A. Nichols, writing in *Printers Ink*.

Concerns like the Beech-Nut Packing Company, Armour, Welch, National Biscuit and Quaker Oats have found that group advertising is the most practicable, because it spreads its effects around among the various products with a fair degree of evenness. Also it sells the house as a whole rather than giving the advantage to any particular product. There is no intention here to make a flat and general recommendation of the group system as being able to remedy all the recently acquired ills of advertising, selling and distribution. There is no cure-all in advertising any more than there is in medicine. But certainly the thing at least has aspects that deserve careful consideration.

In the first place, here is a thought that should catch the attention of every sales manager: The most lasting advertising results often can come when emphasis is placed upon the house rather than upon its commodities. This principle works out effectively in the case of Armour & Co. All Armour promotion matter has for its objective the strengthening of the relationship between the Armour dealer and the house of Armour. Moreover, the advertising must at all times sell the consumer the Armour product and the basic Armour idea. It will be readily seen that there is a great difference between selling the product of a house and its individual commodities.

Group and institutional advertising can work together like twin brothers. This will be made plain by a quick glance at the Armour method.

After Armour had decided to advertise on a comprehensive scale a most perplexing problem arose. How could more or less equal representation be given to the more than 300 food items which the advertising was designed to push? If only one or two, or even half a dozen, items were shown in a single advertisement it would take a long time to get through the entire list. Meanwhile, the advantage that could be gained for any individual commodity would be lost through lack of sufficient follow-up.

The problem was complicated further by the fact that new items were being constantly added—items that necessarily had to receive benefit of the publicity. At length it was determined that the then current methods of advertising were not adequate to the task in hand and that some different way must be devised if the 300 items were going to have anything like equal representation.

### The Unifying Label of Armour

It was then that the famous blue and yellow Armour oval label was designed—a label that identifies a product as belonging to the Armour line of foods.

Up to this time there had been a variety of labels on Armour top grade products and all these

were changed to the oval label form. In other words, the label on a can of pork and beans would be the same in shape, color and typography as on a package of mince meat. On every package, no matter what its contents, is the oval design with the name "Armour's" at the top. This works out so accurately that the firm's products bearing such trade names as "Veribest" or "Star" can be placed on packages without the least confusion. The oval label is a general designation covering a wide variety of top grade products and is so striking in design that an Armour oval label item can quickly be identified on the dealer's shelf.

For advertising purposes the entire line was divided into convenient groups such as cooking fats, sea foods, prepared meats, meat alternatives, beverages, spreads, salads, summer specialties, dairy products, vegetables and cereals, condiments and flavorings, desserts.

In advertising the cooking fats group, an effort was made to convey to the public the idea that the company could furnish anything in this line, whether it be a vegetable or an animal product, butter, oleomargarine, vegetable compound, vegetable oil, or plain ordinary lard that was got from pigs. The big point was that any kind of cooking fat with the oval label on it was a high-grade product. Therefore, the whole thing could be advertised advantageously in a general way without going to the trouble and expense of designating each item by name.

In the first advertising designed to sell the entire oval label line, Star ham ("The Ham what Am") was featured strongly. "Star" is the trade name that goes with certain oval label products, such as ham and bacon. Most of the oval label goods, however, are named "Veribest," which was the old trade name for canned meats. "Star" ham and bacon already have been widely advertised and a big demand built up for them under that name. When the oval label was tacked to the ham and bacon this naturally helped swing sentiment in favor of the entire oval label line.

In a widespread campaign among newspapers and magazines featuring the ham and bacon, attention was directed to the whole line marketed under the one label.

To get over the idea of oval label quality, a series of advertisements told the entire history of the products from the time they were selected at the source of production until they reached the consumer's table.

The idea behind all this is that a trade-mark can become a grade mark. When a trade-mark is thus made widely known through advertising, its selling power can hardly be estimated. It helps in quantity selling for one thing. Armour salesmen find little difficulty in installing complete oval grouped on the shelves so as to make a big smash in behalf of the oval label. People have seen the



label in magazine and newspaper advertising. They realize it when they come into the store. Instances are numerous where retail stores' sales in canned goods have doubled and trebled after the oval label department had been installed. This is the kind of quantity buying the retailer can well afford to do. It gives him a reasonable quantity of each of many items instead of too much of a few items.

#### **Sales Quickened All Down The Line**

Suppose Armour products were scattered through the other canned goods on the shelves. A woman might see a can of Armour pork and beans and ask for it. The related products naturally would make no impression upon her. But when she sees twenty or twenty-five items on the shelves properly grouped, she begins to think of the whole line rather than individual items. The uniformity of the labels, the grouping of the goods and the large quantity visible at all times help to make such a department a success. The customer may never have heard of Armour's mince meat or a number of other items on display. But she buys them because she already has been sold upon the oval label as shown in the pork and beans or the Star ham she had purchased previously.

The power of the family of products idea in selling quantities to the dealer and helping him increase his sales to the consumer is logical enough when you come to think of it. It is simply attack in massed formation that tears a big hole in buying resistance, and which is vastly more resultful than the nibbling tactics all along the line that come when items are advertised and sold separately.

In one way it represents the application of jobbing methods to manufacturers' distribution problems. It might even be called an unanswerable argument in favor of the jobber. The reason manufacturers distribute through the jobber is that the jobber can do the distributing more economically. The jobber's ability to do this by no means indicates that he is a smarter man than the manufacturer. It merely means that he has many items instead of a few and can make his selling-attack with a confidence born of his knowledge that "in union there is strength."

This is exactly what Armour is doing. The same thing can be said for Heinz, for Van Camp, Libby, McNeill & Libby, Wilson & Co., and many others. Finding it impossible, or at least impracticable, to advertise and sell their products separately, these concerns grouped their goods in such a way as to make the sale of one help the sale of another, even though the other may not be mentioned in the advertising by name.

The manufacturer with many lines can do this. Through his use of application of jobbing methods he may be said in a way to be independent of the jobber. But how about the manufacturer with limited lines—with one or two items, perhaps?

Especially in a year like the present, when retailers are buying in smaller quantities, the jobber has a value which the latter class of manufacturer can hardly afford to ignore. For a considerable time to come the retailer is going to do his buying in close accord with consumer preference. He is going to get the goods that he can sell the easiest. In addition to buying in smaller quantities he will want more

items. This means that the jobbing house is the logical place for him to buy.

It is foolish to say that the jobber is done or that he will be done. In the country's great distribution system he is second in importance only to the banker. And the banker himself is a jobber. The Government manufactures the money. The banks distribute it. You and I spend it. It might be possible for each of us to have his own individual dealings with the Government in the distribution of money. But we all prefer the jobbing system as it is carried on by the banks.

If the country's business would arrive at a stage of development where we could do away with the banks then it might be the time to talk about banishing the jobber.

Many big advertisers are following the family of products idea in merchandising, but few have a standardized label and trade-mark.

The grade mark idea is particularly impressive. If a concern builds up a reputation for a line so as to make its trade-mark a grade mark, it naturally follows that the reputation must be guarded with jealousy. Before a new Armour product can be added to the oval label line it must be passed upon by a label committee. Its merits and demerits are tested out carefully and it is entirely up to the committee to say whether it shall bear the coveted label or whether it must be given one of lesser distinction. Armour has a second grade of food products which it markets as the "Helmet" brand. This brand is never advertised and is entirely separate from the oval label line.

Leading group advertisers in the food products line are Morris & Co., the packers; the Baker Food Products Co., which advertises a general line of "Delicia" foods; the Pillsbury Flour Mills Company; Libby, McNeill & Libby, whose campaigns have been described lately in *Printers' Ink*; George A. Hormel & Co., distributors of Hormel's dairy hams and bacon; Beech-Nut Packing Company; the H. J. Heinz Company, which advertises a lot of products at one time; California Packing Corporation, shippers of Del Monte products; Loose-Wiles Biscuit Company, manufacturer of Sunshine biscuits and allied lines; Curtice Brothers Company, Blue Label foods; the Red Wing Company, grape juice products; Acme Packing Company, Red Crown meats; the Van Camp Company; Quaker Oats Company; the National Biscuit Company; King's Food Products, packers of King's dehydrated fruits and vegetables, and Wilson & Co.

There is another phase to the family of products idea which seems to be born out by the experiences of the Quaker Oats Company. For years this company concentrated all its advertising and selling effort on one product—Quaker Oats. As such it built up a tremendous asset not only in creating a market for Quaker Oats, but in selling itself to the people of the country. With only one product, therefore, it was only realizing to a limited degree upon the cashing-in value that its standing before the people gave it. Recognizing this truth, Quaker Oats began the addition of products until now it has quite a sizable family. It recently



put out a new kind of corn flakes called Quaker Quakies. And now it is advertising macaroni.

Just consider what Quaker Oats has done. Suppose that the demand in its main product should at any time slow up. It probably won't, but suppose it should. With its diversified line vigorously pushed under the family name such slowing up of sales in the main item would not seriously affect its business. It is easy to see what might be the case if the family consisted of only one child.

The manufacturer needing new business would do well to ponder carefully whether he is realizing to the limit upon the great asset he has in the reputation that his advertising has created for him. Wouldn't it be entirely practicable for him to use his manufacturing and distributing machinery in the production and sale of other items? Couldn't he unite these other items logically and thus create a family, each member of which would pay an individual profit and also lend its force to pushing ahead the main item?

Here is where we see the huge advantage of imagination in business—of looking ahead and planning against eventualities.

A product that leads the field today may be a trailer tomorrow. The writer knows of a business that, through logical process of development, was revolutionized in five years. It now has got entirely away from the old lines simply by looking ahead and utilizing what it learned.

Leaders in the great businesses of the country have found out through profitable—and sometimes costly—experience that it always pays to have a partially developed line or idea coming along, so that emergencies can be met. The thing can't be done on the spur of the moment when the need arises.

Imagination in business is a good thing to utilize right now. This is the thing that gives manufacturers and others courage to advertise and work with redoubled energy when things are dull. Imagination in business is the property that helps one keep away from the heresy of demanding advertising results in advance—that helps him realize that he is working to-day for the sake of what he can gain to-morrow.

## Increasing Sales of Canned Products

By A. C. McMONAGLE

Franco-American Food Co.

SOME students of economics contend that a manufacturer's stock of finished products is a liability until the goods are sold. Whether we agree fully with this contention or not, we all know that the correct relation of merchandising to production is vital to success.

The merchandising program generally includes three principal factors, namely: Advertising, selling and dealer cooperation. The first two (advertising and selling) usually call for individualized effort as each manufacturer is primarily interested in the marketing of his own products.

The third plank in the platform (dealer cooperation) seems to offer common ground for allied effort to advance the interest of the pork and bean industry.

It is not inconsistent to propose that we work cooperatively for a common cause as in the broadest sense we are co-workers since every packer of good canned foods contributes to the success of all, by increasing confidence of consumers and interest of dealers in prepared food products. The only real competitor is he who packs poor goods or does not deal fairly with the trade.

### Importance of Retailer

The importance of the retailer is not always recognized or fully appreciated, but any consideration of the whole merchandising problem serves to emphasize the value of the good will and hearty cooperation of the "Man behind the counter," who is in direct contact with the ultimate consumer of our goods.

When we think of the thousands of buyers who enter grocery stores daily and cogitate over the fact that each is a possible customer for our line, we begin to appreciate the value

of having our retail distributors linked up with us in our efforts to increase the use of canned pork and beans.

That the assistance of retailers is desirable is clear,—the question is how to secure it.

While we will, of course, each bend our efforts toward the sale of our own brand, it would seem as though we could, by working along somewhat similar lines, emphasize the advantages of prepared pork and beans and the opportunity for increasing business on same to the end, that many dealers who now only keep the goods on hand for those who call for them, would reach out for the additional business which is to be had for the asking. In seeking this cooperation from our retail distributors we must base our claims on facts which will appeal to them as reasonable and practical. That we can establish our case on this basis can be readily demonstrated.

### Popular Product

Canned pork and beans has come to be one of the most popular items in the grocer's stock. The fact that it is popular justifies our asking dealers to give the line special consideration, both in displays and through salesmanship. The dealer who puts his time and effort on the sale of goods which at best, will appeal to only a small percentage of his trade, is working against considerable resistance, but in pushing the sale of pork and beans he finds a ready response from practically every customer.

While definite figures do not seem to be available as to the pack of pork and beans, it is estimated by trade authorities that the sale is approximately five hundred million cans per year.

Surely this volume of business is of special interest to retail grocers and those who see the

An address delivered before the National Cannery Association at Atlantic City, N. J., Jan. 18.



present and future possibilities of the line will undoubtedly feature it so as to get not only their share of the business already developed, but participate in the additional business which is within reach of those who will but make a reasonable sales effort.

This popularity of canned pork and beans is well founded.

Consumers increasingly prefer the canned, to the home prepared beans for the following reasons:

**"A" Uniformity.** All risk is removed as to the quality and flavor being to the liking of the diners, and this assurance as to uniformity of quality and flavor is recognized and appreciated by housewives. In other words by purchasing the standard brands of canned pork and beans the consumer knows in each instance that the dish when served, will meet with hearty approval.

**"B" Economy.** As there is practically no waste of materials when the consumer uses the canned article this makes it attractive from the economical standpoint.

**"C" Convenience.** The preparation of pork and beans in the home kitchen calls for a liberal amount of time and effort. The fact that it is necessary to start preparing the home made beans the day before they are to be served, counts decidedly in favor of the use of the canned product. When the appetite prompts the serving of this delicious and nutritious dish, it is desirable to have it ready then, and not postpone the serving until another day.

A restaurant which passed out menus to patrons and then announced that the foods listed would be served the following day, would not be popular with the modern busy man or woman.

Our first claim upon the cooperation of our distributors is therefore based on the fact that the product is one which will respond generously to any extra sales effort, because consumers appreciate that canned pork and beans are uniform as to quality, economical and convenient.

#### **Profitable Product**

Our appeal for dealers cooperation can also be based on the fact that pork and beans is a profitable product. The sale is steady and the volume sufficient to accomplish a quick turnover of capital invested. This is the test which the up-to-date grocer applies in estimating real profits. Dead stocks or goods which move so slowly that they become shopworn and must be sold either at a sacrifice in price, or at the risk of displeasing customers, are not favored by live merchants regardless of percentage of profit involved.

Another consideration in favor of the line is that the sale is large enough to justify practically every merchant buying in fairly good quantities, and still maintain a satisfactory rate of stock turnover. This permits of economies in distribution and results in the dealer buying on a basis which enables him to pass the article on to the consumer at prices which attract trade and please patrons, and this is a sound foundation on which to build a profitable business.

## **Government Will Make Sweet-Potato Sirup**

What may mean an important new industry for the South and a market for the waste of one of its most important farm products, has been given its initial impetus in the decision of the United States Department of Agriculture to establish a production unit at Fitzgerald, Ga., for the manufacture of sweet-potato sirup.

The process for the manufacture of sirup from sweet potatoes was worked out in the laboratories of the Bureau of Chemistry by Dr. H. C. Gore. The sirup is rich in sugar, of a fine brown color, and highly palatable. It has been found to be valuable for baking, candy making, and table purposes; many persons think it equal to first-class cane sirup.

#### **A Laboratory Success**

While the product is a success from a laboratory standpoint, the department is not in position to recommend it to manufacturers until questions of the cost of commercial production and the market value of the product, compared with cane, corn, and other sirups, is determined.

For this reason, the project was turned over to the Office of Development, in the Bureau of Chemistry. Members of the staff made a tour of the principal sweet-potato centers of the South, where they found a widespread interest in the project. Chambers of Commerce, Rotary Clubs and similar commercial organizations in a score of cities, although aware that the proposed plant was only experimental, were anxious to secure it for their own communities. Fitzgerald was selected partly because it has a large potato-curing and storing establishment which promises a supply of material from the 1920 crop. A site and building for the project were also available.

Equipment specially constructed by the department at Washington will be shipped to Fitzgerald immediately and installed to be put in operation as soon as possible.

The possibilities of the sweet-potato sirup industry lie largely in the utilization and marketing of a part of the crop which heretofore has not been practicable either for storage or shipment to the Northern markets. This results in the loss of a large percentage of the crop annually. Potatoes that are too large or too small for table use or for commercial canning are as useful in sirup making as perfect ones.

#### **Patented for the Public**

The process, which was developed by Dr. Gore, has been patented by the Department of Agriculture for the benefit of the public. The apparatus required is so simple and comparatively inexpensive that plants could be established within team-hauling distance of growing centers, as is the case with canneries.

This is the first project undertaken by the new Office of Development. When the commercial possibilities of sweet-potato sirup production have been thoroughly tested, it is the intention of the Bureau of Chemistry to establish similar semi-commercial plants for the development of other projects that have been worked out in its laboratories.



# Values of Fats and Fat Substitutes

## Nutritional Properties of Some of Those Less Familiar and Less Commonly Used

By JOHN PHILLIPS STREET

THE importance of fats in the human diet is well recognized. Where funds are limited, and where the expenditure of every cent must be so handled as to secure the maximum return for the investment, it becomes necessary for the purchaser to appreciate the relative values of the different kinds of fats, and their respective advantages and disadvantages.

The limits of this paper preclude a discussion of the better known fats such as milk fat (butter, cream, and cheese) and lard. On the other hand I will discuss some of the less familiar and less commonly used fats, and will consider their claims as suitable forms of human food.

In an earlier paper I discussed in detail the very important fat, oleomargarine, which immediately comes to mind in any discussion of economy or substitution for more expensive forms. The oleo question has been discussed almost threadbare, and it is unnecessary at this time to reopen the controversy as to its merits or demerits. Suffice it to say that a high grade oleomargarine is one of the purest, most carefully manufactured food products on the American market today, infinitely purer, cleaner, and more desirable in every way than much of our butter. The tragedy of the situation is that because of the initial unwillingness of the oleo manufacturers to introduce the product on its own merits, the industry was in large measure founded upon deceit, and oleo received an ill name among consumers which even now is only slowly being cast aside. This early deception aroused the antagonism of most pure food officials, and gave the dairymen an excellent talking point against their formidable rival. As a result, today colored oleo is so highly taxed that it has to be sold at a greatly advanced price and the conditions surrounding its sale, caused by Federal and state regulations, are such as to arouse distrust in the minds of the consumer. Meanwhile colored butter can be sold without any restrictions whatever, and, until our legislators can be rendered a little less fearful of the agricultural interests, this unfair trade discrimination will continue and oleo at a reasonable price will be denied to the consumer.

All fats resemble each other chemically in that they are the result of various combinations of fatty acids with glycerin. Physically they may appear either in the liquid or solid form, due chiefly to the nature of the predominating fatty acid. However, in recent times the hydrogenation process had made it possible for even

the liquid oils to be offered to the consumer in the solid form.

From the food standpoint, fats must be grouped with the sugars, in that they are chiefly energy producers and not strictly tissue builders. It is true that they are in a sense protein-sparers, but we must consider them chiefly as means of supplying the power and heat on which life and ability to work depend. Power and heat are produced in the body in the same way as in the furnace of a steam boiler; namely, by the combustion of fuel. Fats, sugar, and starch are chiefly used for body fuel. They are burned in the body, forming carbonic acid and water, which are given off in the breath or through the skin and kidneys. But in this process, energy is developed which shows itself in forms of work—the unconscious work of the heart and of the muscles which control breathing and do the other housework of the body—as well as in conscious work of all kinds. When eaten in quantity more than sufficient to supply energy, the fats may also take part in the formation of body fats which serve as stored fuel for emergencies.

Fat has an energy-producing value about 2.25 times as great as that of either protein or sugar, and this is true, with narrow limits, regardless of the nature or origin of the fat or oil. One ounce of fat has been shown to yield 264 calories to the body. From the above it is obvious that, generally speaking, great freedom may be practiced in substituting one fat for another in the diet, regard being given, of course, to personal preferences or prejudices.

### Not of Equal Nutritional Value

Recent investigations, however, have shown that the fats are by no means of equal nutritional value. Some fats possess properties for the promotion of growth which are almost entirely lacking in others. Osborne and Mendel have demonstrated that butter fat possesses this growth-promoting property to a high degree, thus explaining the usefulness of milk in the dietaries of children. Beef fat and oleomargarines (made of oleo oil) also show this property, which is lacking to lard, olive oil, and margarines (made from the usual vegetable fats and hydrogenated oils). There is still much obscurity as to the nature of the substances endowing certain fats with these most valuable properties, but whether we call them "vitamines," "accessory diet factors," "fat soluble A," or what not, their importance in the human diet has been clearly demonstrated. In



TABLE I.  
ANALYSIS OF FATS MADE IN AUTHOR'S LABORATORY

BRAND	Per Cent Moisture	Per Cent Protein	Per Cent Ash	Per Cent Fat	Per Cent Free Fatty Acids	Refractometer at 40° C	Reichert-Meisel No.	Halphen Test	Nitric Acid Test
Wesson Oil.....	0.06	.....	.....	99.94	0.06	59.5	1.04	red	yellow
Mazola .....	0.00	.....	.....	100.00	0.17	62.5	0.86	yellow	red-brown
Vegetole .....	0.02	0.38	0.02	99.58	0.15	59.5	0.45	deep red	red-brown
Cottolene .....	0.02	0.31	0.08	99.59	0.10	56.0	0.48	deep red	red-brown
Crisco .....	0.02	0.19	0.05	99.56	0.18	54.7	0.50	yellow	yellow
Kuxit .....	0.31	0.13	0.03	99.53	0.15	37.0	5.03	yellow	yellow
Sawtay .....	0.03	0.38	trace	99.59	0.08	35.0	8.02	yellow	

this connection, however, the consumer must be cautioned not to avoid a food fat because of its lack in growth-promoting properties, as in the usual liberal mixed diet doubtless a sufficiency of such compounds will be derived from other sources. In the diet of children, however, the kind of fats used in obviously much more important than in the feeding of adults.

The hydrogenation of fats until comparatively recently has not been of general importance in the food industry. Of late, however, it has had a wide application and it is important to consider what effect the process has had on the wholesomeness and digestibility of the fats so treated. It seems to have been demonstrated that the process in no way impairs the digestibility of the fats. A more serious objection raised against this class of products is the possible danger due to the presence of traces of the metals used as catalyzers in the hardening process, especially nickel. The amount of this metal in the case of certain cottonseed oils has been found to range from 0.020 to 0.075 milligram per kilo. The significance of such may be appraised at their full value when comparison is made with the amounts of nickel taken up by various foods prepared in nickel-lined cooking utensils. Bailey has reported that spinach so prepared contained from 25 to 27 milligrams per kilo, peas 12 to 16, fruit cooked in half-strength ordinary vinegar 65 to 67, cabbage 83, sauerkraut 127, and potato 80 milligrams. No injurious effects are recorded due to the use of foods thus prepared, which contained several thousand times as much nickel

as the hardened oils in question. The question, therefore, appears to be of academic, rather than of practical importance.

The inspection of edible fats and oils has received much attention from food officials in the past, not so much from the fear of the presence of any deleterious substance as to guard against the commercial deception of substituting the cheaper for the more expensive product.

In discussing the edible fats we will consider them under three quite well defined groups: (a) salad oils, (b) cooking fats, and (c) butter and its substitutes.

#### Salad Oils

The queen of table oils is of course that supplied by the fruit of the olive tree, and its lineage among food products is a long one. While formerly it was produced chiefly in Oriental and Mediterranean countries, at the present time the industry in our far western states is constantly increasing in importance. The best oil is obtained from sound fruit picked just before full maturity. This is the "virgin" or "sublime" oil and is generally characterized by a greenish color due to chlorophyll. Genuine oil, however, may be devoid of this peculiar color. At one time the adulteration of olive oil with cottonseed, peanut, or sesame oils was very common, but of late years such sophistication has been almost completely abandoned. In the years of 1905, 1906, 1907 and 1909, for instance, the writer found no adulteration of this nature in olive oil sold in unopened bottles. In the oil sold in bulk, notably by druggists, however, such adul-

TABLE II. COMPOSITION OF NUT MARGARINE AND OLEOMARGARINE

BRAND	Per Cent Moisture	Per Cent Protein	Per Cent Ash	Per Cent Fat	Per Cent Free Fatty Acids	Refractometer at 40° C	Reichert-Meisel No.	Halphen Test	Nitric Acid Test
Nut Margarine A1 Brand, Downey Farrell Co., Chicago	10.84	1.25	4.51	83.40	4.45	40.0	7.00	Deep pink	Brown
Cocoonut Brand, Nucoa Butter Co., Soho Park, N. J.	6.53	0.69	1.58	91.20	0.39	37.2	7.50	Yellow	Brown
Providencee Churning Co., Prov., R. I.	11.28	0.75	1.14	86.83	0.47	39.0	6.15	Yellow	Yellow
Oleomargarine Lily, Swift & Co.	1.67	0.56	0.41	97.36	0.74	52.0	1.50	Deep red	Red Brown
Premium, Swift & Co.	2.54	0.63	0.60	96.23	0.63	49.2	0.99	Red	Red Brown
Gilt Edge, John F. Jelke Co.	8.52	1.25	1.62	88.61	0.74	49.2		Pink	Red Brown
Good Luck, John F. Jelke Co.	9.20	1.00	3.08	86.72	0.50	49.3		Red	Red Brown
Silver Churn, Armour	4.90	0.56	1.44	93.10	0.80	51.0	1.30	Deep red	Red Brown



teration still persisted in Connecticut in those years. At the present time the chief deception in the sale of olive oil arises from the blending of inferior oil, obtained from repressings of the olive pulp, with the higher grades. Such oil should more properly be used for the manufacture of castile soap than for a salad dressing.

Cottonseed oil, always a competitor of olive oil and sometimes an unfair one, is essentially an American product, for here the best grades of the oil are produced. The oil requires refining before it is suitable for food purposes, and it is thereby deodorized and decolorized, and sometimes "chilled," the latter process consisting in the removal of stearin, which otherwise would cause the oil to become cloudy at cold temperatures. Cottonseed oil is rarely, if ever, adulterated, although of course grades of varying excellence appear on our markets. As will be shown later, large quantities of this oil are used in the manufacture of hardened oils and similar products.

Corn oil is another important edible oil. It is obtained from the germ of the maize kernel as a by-product in the manufacture of starch, glucose, corn meal, and hominy. This oil, too, requires refining and deodorization, the resulting product having a golden yellow color and an agreeable color and taste. It promises to be more and more used as its merits become appreciated.

Peanut oil formerly was produced almost exclusively in Europe, but in recent years the industry has been assuming increasing importance in this country. In the past the demand for the whole nuts has been so great in the United States that only the inedible, inferior nuts were available for the production of oil, and an oil of the highest grade was rarely produced. The importance of this oil, however, in our industry is now receiving recognition and its pleasant nutty flavor appeals strongly to the tastes of many. Like cottonseed and corn oils, it requires refining before becoming suitable for food.

Cocoanut oil is derived from the dried meat of the cocoanut, known as copra. The oil itself has never been widely used in this country, but in recent years has become commercially important from its extensive use in the hydrogenated form in the nut margarines.

Other edible oils, such as those obtained from the soy bean, poppy, rape, sesame, and sunflower seeds and from palm kernels, are of minor importance in the American market.

A word of caution is necessary in the purchase of "salad" oils. The consumer must realize that generally these are cottonseed, not olive oil; ordinarily their sale under such a designation is well within legal requirements. It is well to remember that the manufacturer of olive oil will not conceal the identity of his higher priced product under the non-informing name of "salad" oil. Trade usage, however, has limited the use of the term "sweet" oil to olive oil, and any other oil sold under that designation constitutes an adulteration in most states.

#### Cooking Fats

In our former days of simple living, lard and

beef suet were the mainstays as cooking fats. To-day there is a host of such preparations, generally sold under specific proprietary names, which are either mixtures of animal fats and vegetable oils, or a simple vegetable fat disguised under a fanciful name.

The following preparations of this nature have been examined in past years in the writer's laboratory and their essential ingredients were as indicated: Cotosuet—cottonseed oil and beef fat; Korno—corn oil, cottonseed oil, and a harder fat like stearin; Crisco—hardened vegetable oil, probably chiefly cottonseed; Waverly Shortening—beef stearin and cottonseed oil; Vegetole—vegetable product containing cottonseed oil; Kuxit and Sawtay—vegetable products having the character of cocoanut fat; Wesson Oil—cottonseed oil; and Mazola—corn oil.

Recent analyses of some of these fats made in the writer's laboratory are indicated in an accompanying table.

As the analyses indicate, these products contain only traces of moisture and are nearly 100 per cent fat. None of the products listed contained animal fat except Vegetole. The quantities of free fatty acids present are low, and this is important as these compounds play a prominent part in the development of rancidity. Light and air act upon the free fatty acids, and for this reason edible fats and oils, particularly the latter, should be kept in well closed containers in a dark place. Hydrogenated fats perhaps require less care in this respect.

Which one of the above fats should be used is largely a matter of taste and experience. The use of "smoky" fats for deep frying, for instance, will be avoided. A fat desirable for such frying, therefore, should have a relatively high smoke test, that is, from 350 to 400 degrees Fahrenheit. The following results along this line were obtained by Blunt and Feeney:

#### Smoke Test by Blunt and Feeney Showing Desirability of Fats for Frying

	Degrees Fahrenheit
Wesson Oil .....	451
Snowdrift .....	450
Crisco .....	448
Leaf lard .....	430
Butter fat .....	406
Leaf lard (heated 5 hours) .....	405
Bulk lard .....	381
Olive oil .....	347
Peanut oil .....	323
Peanut oil .....	300
Cocoanut oil .....	277

As already stated, butter itself cannot be discussed in this paper. To aid in comparing it, however, with the various substitutes, let us remember that a typical butter contains about 15 per cent water and 85 per cent solids (82.5 per cent milk fat and 2.5 per cent other milk ingredients and salt). Unfortunately the modern butter maker tends to incorporate more water in his product with a consequent decreased percentage of butter fat.

Renovated butter is made by melting genuine; often rancid, butter, and churning the separated curd and other water-soluble ingredients with



milk or cream, or both. Its composition should be the same as genuine butter.

Oleomargarine has already been discussed in an earlier paper. Different manufacturers use different formulas, but generally it consists of oleo oil, neutral lard, butter, milk, cream, and salt, with varying amounts of cottonseed oil. As Table II shows, oleo generally contains much less water than butter, another point in its favor as an economical food product.

Table II shows the analyses of certain brands of nut margarines as well as a few typical brands of oleo as determined by Bailey in my laboratory.

The nut margarines are a comparatively new product, and, at least those examined in my laboratory, consist chiefly of cocoanut fat with varying amounts of cottonseed or other vegetable oils. The fats are churned with milk to develop a butter flavor, and salt is then added. To conform with legal requirements (these nut margarines being classed with the oleos) the products are not colored, but color capsules accompany the package and the consumer can color his own to his heart's content. In the samples reported the color was found to be annatto, a harmless vegetable product, largely used under legal sanction in the coloring of butter.

None of the nut margarines contained an excess of moisture, somewhat less than shown by average butter, but more than typical brands of oleo. They also contained, as a rule, somewhat more fat than butter and less than oleo. The amounts of free fatty acids were within normal limits. The last two brands of nut margarines claimed to contain not over 0.1 per cent of benzoate of soda, and the claim was found to be correct. In my judgment this preservative should be entirely eliminated from these products, as its presence is unnecessary and will tend to prejudice against them consumers who by this time have been pretty well educated as to the uselessness and undesirability of this preservative in human foods.

The nut margarine appeared to be purely vegetable fats. They are palatable, wholesome, and are distinctly useful products in these times of high prices with limited supply and diminished production. In the feeding of children, however, they should not entirely replace butter, as in general they are deficient in, or entirely devoid of, the growth-producing properties characteristic of butter fat.

Extracts from an article in "The Modern Hospital."

## The Food Value of Prunes and Apricots

BY M. E. JAFFA

Professor of Nutrition, University of California

**T**HERE are excellent reasons why more dried fruits should, in some form or other, be eaten in much larger quantities than at present. We must remember that there are two chief objects of food: first—to build and repair tissue; second—to yield energy.

Can dried fruit build and repair tissue? Can dried fruit yield energy? The answer to both these questions is, "Yes." The dried fruits, however, cannot build to any appreciable extent, neither muscular tissue or bony tissue, but the fruit can build fatty tissue.

The chief nutritive element in the dried fruits generally is sugar—one of the most valuable of the carbohydrates and certainly most easily digested and assimilated of all. When we consider that the consensus of opinion among physiologists and nutrition investigators is that the carbohydrates of our food, and not the nitrogenous compounds, are the source of muscular energy for the body, we can better appreciate the nutritive value and the desirability of dried fruits.

The average amount of carbohydrates (mainly sugar) is prunes and apricots, for example, is about 63 per cent; while the average amount of carbohydrates (mainly starch) in white bread is only about 56 per cent. In other words, the carbohydrate elements in these dried fruits shows up to better advantage than that in bread.

The value of fruits and vegetables also in the diet is further emphasized when the mineral

ingredients of foods are considered. These, for convenience and brevity, may be divided into base-forming and acid-forming elements. Those contributing to the former are potash, soda, lime, magnesia, etc.—to the latter, sulphur, phosphorus, chlorine, etc. In meat and eggs we have an excess of the acid-forming elements. The grain by-products indicate sometimes a balance or a slight predominance of acid-forming elements and the more refined the product the greater is the excess. In milk the balance is in favor of the bases. Vegetables and fruit contain a large excess of base-forming elements. These statements indicate very strongly the desirability of having in the diet a generous proportion of fruits. A diet consisting only of cereals, meat and eggs (in which, therefore, the acid-forming elements would greatly predominate) would serve to bring about disturbances of metabolism.

It might be well here to consider also the mineral matter to be found in dried fruits. Prunes, especially, are high in iron. Certainly this is a valuable point to remember in considering the nutritive value of prunes. Another important effect of eating fruit is the introduction of an acid substance into the digestive tract which later yields an alkaline or basic substance in the blood and tissues.

Recent experiments of Osborne and Mendel have shown that deciduous fruits furnish water-soluble vitamin and that prunes apparently are richer in this dietary essential than



apples and pears. It is therefore evident that the nutritive value of prunes should be more highly appreciated because, in addition to the qualities already discussed, this fruit should be considered as a source of water-soluble vitamin.

One method of comparing the total value of one food with another is by means of the calorie or unit of energy. By examining the caloric values of foods listed in the table opposite, you will see how favorably dried fruits compare with white bread, for example. It should be remembered, however, that the comparison of the chemical composition alone does not always give one the true physiological or real value of the food. While it is true that there is not much difference in the caloric values of the two foods, still a combination of the two is far better than either alone.

In using dried fruits we obtain not only the nutritive value of the sugar, but whatever other

hygienic or medicinal value they have by virtue of the salts and organic acids found in fruits and also in vegetables.

The craving for sweets exhibited in most children and many adults is a natural demand on the part of the system for a needed food. This truth is brought home to us more clearly when we remember that Nature's food for the infant, mother's milk, contains of its solids 50 per cent sugar. Nature continues to provide sugar for the older children in the form of sweet fruits. But it must be borne in mind that after we have outgrown the milk, all the necessary ingredients in the proper proportion are not found in any one food as they are in milk.

Thus, it is left to the instinct, judgment and wisdom of man to provide himself with the different foods and to combine them for himself into a perfect whole. If he ignores one class and over-eats of another he is usually punished for his mistake. That is Nature's law!

## Remarkable Growth of California's Fruit Packing Industry

IT is an interesting fact that while we recognize the beginning of the canning industry with the discoveries of Nicholas Appert during the time of the Napoleonic Wars, we may safely say that the canning industry of the Pacific Coast began during the early sixties, during the period of the Civil War in this country.

In the latter part of the eighteenth century, during the colonial period of this country and just prior to the Declaration of Independence, the Spanish padres were coming into California and establishing missions, conducting missionary work among the native Indians, teaching them the arts of industry and agriculture and incidentally, planting vines and fruit trees and olive trees. With the very crude methods and implements available at that time, the trees showed great vitality and produced abundant crops, so that there was considerable development in the fruit growing in California prior to the discovery of gold in 1848, prior to the time of the Civil War above mentioned when the canning industry seemed to have its beginning.

### Canneries Started in Days of '49

At that time there was no thought in California that did not relate to the discoveries of gold and gold-mining. Very little thought was given to agriculture and naturally the few that did give attention to the production on merchandising of food products found ready and profitable markets with the miners as well as with the steamship lines which were so busily engaged in bringing the Argonauts and the pioneers to California. Accordingly, there were several canneries started for the making of canned fruits, canned vegetables, preserves, pickles and things of that sort and these products were

sold to miners and shipping companies, as well as to the United States Government, as the Government used some products of this kind during the War.

While the beginnings were very small in volume, the industry steadily developed to such an extent that in 1904 the pack of canned fruits was 2,800,000 cases and the pack of canned vegetables 1,000,000. In 1910 the pack of fruits was 4,000,000 and the pack of vegetables 2,000,000. In 1913 there was a very slight increase over the figures of 1910, while with the beginning of the War in 1914, there was extraordinary development with the result that in that year the packs were increased to practically 6,000,000 cases on fruits and 3,000,000 cases on vegetables. In 1916 the total pack of fruits was over 7,000,000 cases and vegetables over 4,000,000 cases. In 1917 the fruits were practically 10,000,000 cases and the vegetables 7,000,000 cases. In 1918 the pack was approximately 9,000,000 cases of fruits and 8,000,000 cases of vegetables. In 1919 the pack of fruits was 13,000,000 cases and vegetables 7,000,000 and in 1920 it is estimated that the fruits were 11,000,000 cases and vegetables were 7,000,000 cases, giving a total pack of canned fruits and vegetables for the past year of approximately 18,000,000 cases.

### Climate Favorable for Fruit Growing

This extraordinary development of the fruit-canning industry of California has come very naturally because of the range in climate and soil in this State of very large area. It should be remembered that the North latitude of the State corresponds with Cape Cod in Massachusetts, while the Southern boundary corresponds with Savannah. The altitude extends from below the sea level and the great valleys which are almost on the sea level to the enormous

An address by C. H. Bentley, San Francisco, before the National Cannery Association, Atlantic City, N. J., Jan. 19, 1921.



height of 15,000 feet reached by Mt. Whitney, the highest mountain in the United States outside of the territory of Alaska. With the wide range in climate and soil found under these conditions, opportunity has been given for the production of almost every known variety of fruit and vegetables.

During the earlier period, when there were vast areas of the valley lands devoted to the raising of wheat, and export business with Great Britain began. Sailing ships came into San Francisco for the purpose of carrying the wheat to Great Britain and other European ports. Later on these vessels offered desirable opportunities for the movement of canned foods and other merchandise to Great Britain and there was laid the foundation for export business that has proven to be very valuable. Prior to the War, about 25 per cent of the canned fruits of California were exported. In 1919, it was even larger than that percentage. In 1920, unfortunately, this business had practically all been cut off and with the natural result that the canned foods market in general was seriously depressed.

The activities of the war greatly stimulated production and, in 1919 when Europe was still short of food supplies, there was a disposition on the part of importers—not only in Great Britain but in other countries such as Sweden, Norway, Denmark and Holland—to buy freely, anticipating that they would be able to resell canned fruits in Germany. This opportunity, unfortunately, has not arisen, but the present depression has served to emphasize the fact not only that foreign markets are essential to the proper activity of the canned fruit business, but that with any reasonable development of foreign trade on our canned vegetables, such as canned tomatoes, peas and corn, we would not only stabilize our domestic market, maintain our maximum activities in the industry, but undoubtedly secure opportunities which would justify a greater development of the industry all along the line. It is needless to say that this would work out to the advantage not merely of canners and exporters, but also greatly to the advantage of farmers and producers of fruits and vegetables.

#### **Large Production in Hawaiian Islands**

It was natural that fruit canners in California should become interested in the development of fruit in adjoining states and territories. In the Hawaiian Islands has grown the tremendous industry of canning Hawaiian pineapple. With the past twenty years this has grown from the most humble beginning until the pack is now approximately 6,000,000 cases. This business is, to a considerable extent, controlled and financed by California concerns. The secret of the extraordinary development of this business, as well as the Californian canned fruit business, comes from the natural quality of the fruits and also from the fact that canners generally have located their plants where the fruits are grown and have handled them directly from the orchards and plantations. This has led to more and more specialization,

The pack has been somewhat curtailed dur-

ing the past year, the total fruit pack showing a shrinkage of approximately 2,000,000 cases, as compared with 1919. This came in part from the can shortage, but more from the conservative policy followed by bankers and canners. It was realized that with the tremendous high cost of sugar, green fruit, labor and other materials, prices were getting so high as to necessarily restrict consumption and the great problem at the present time is to insure the consumption of the goods now in the hands of jobbers and dealers as well as the unsold stocks remaining in the hands of canners. The buyers' strike is on and is affecting the whole line of merchandise carried by the jobbing trade. The more enterprising dealers, both wholesale and retail, realize that 1921 products will cost them very much less money and some of them are taking their losses now, which will probably be very much less than they would have to take if they continued carrying the stocks, trying to realize their full cost.

#### **Need of Tariff Legislation Pointed Out**

It is hoped that the Ways and Means Committee of Congress will report their tariff bill in some form so as to provide not merely for the protecting of home products against similar products produced in countries operating on a lower wage scale, but that Congress will write the tariff laws in such manner as to give every possible opportunity for the development of the much needed foreign trade. The danger is that if we write our tariff laws merely from the point of view of maintaining a tariff barrier to protect home industries, foreign countries (which would be our natural market) will retaliate by raising barriers against our products, and what is perhaps more important is the fact that unless we restore the buying power of these foreign countries (particularly those which are so heavily in our debt), unless we enable them to sell their natural products here and elsewhere, they will never be able to pay the enormous debts owed to our Government and the rate of exchange will remain on its present basis where trade is seriously discouraged.

The conditions are not promising for 1921 on account of the lack of foreign markets, but we have the consolation that the pack of last year was somewhat smaller and jobbers' stocks are apparently light and that, so far as the new offerings are concerned, they will be on such a tremendously lower basis than has prevailed during the past two years, that we may readily expect to see consumption increasing.

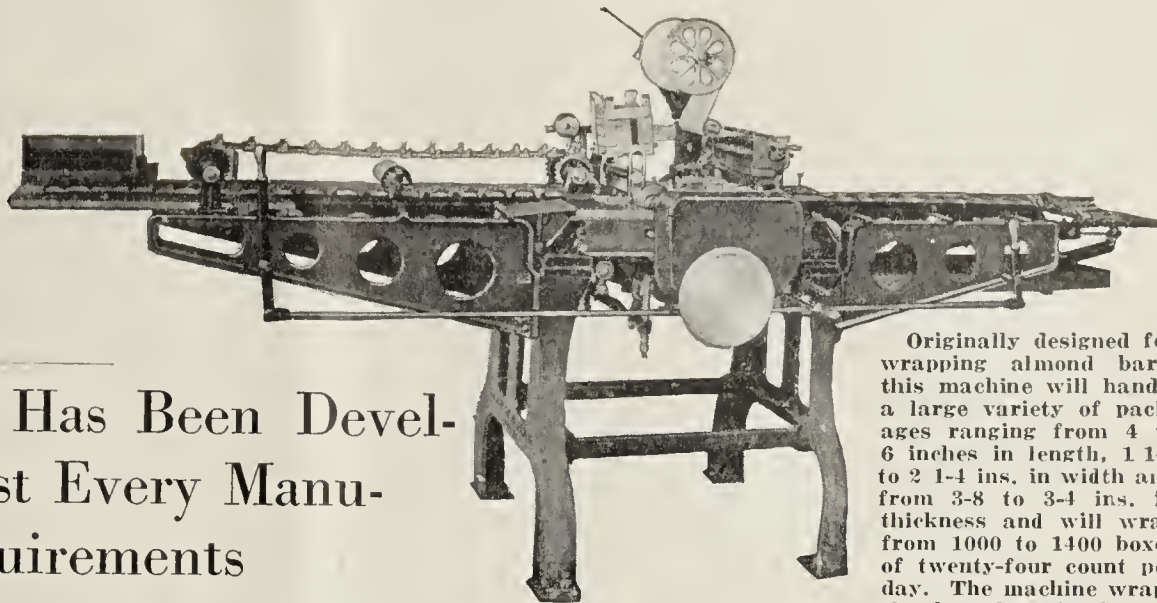
We can help industry as well as ourselves by reducing our costs, putting out our goods in attractive form on the lowest possible basis of cost, encouraging advertising and also by reminding our members of Congress from our respective districts of the absolute need of developing foreign markets—not only to stabilize our domestic markets, insure prosperity for the manufacturer as well as the farmer and producer, but also to enable our late associates in war to sell their surplus product and thereby be enabled to repay their vast obligations to this country.



# Wrapping of Package Food Products

Automatic Machinery Has Been Developed to Meet Almost Every Manufacturer's Requirements

By L. McGREGOR DEMAREST



Originally designed for wrapping almond bars, this machine will handle a large variety of packages ranging from 4 to 6 inches in length, 1 1-2 to 2 1-4 ins. in width and from 3-8 to 3-4 ins. in thickness and will wrap from 1000 to 1400 boxes of twenty-four count per day. The machine wraps the bar first in foil or waxed paper and then applies a hand label.

**T**HE packaging of food products has grown together with the advertising of individual brands. The growth of these two have been necessarily coincident, because it is impossible to identify the brand without the package. It would be impracticable, for example, to advertise a brand of breakfast food if it were all sold from a barrel.

When food products were handled in bulk, the consumer had to rely almost entirely on the judgment and statements of the retailer, whereas to-day he has learned to place his confidence in the manufacturer, and consequently a housewife now feels as secure in buying a branded or trade-marked package from an unknown retailer as from a Fifth Avenue store.

The problems which confront manufacturers are not alone those of manufacturing their product, but of packing it in such a way that it will preserve its original virtues for a period of months under all climatic conditions and temperatures, and so that it will at all times present an attractive and distinctive appearance on the shelf.

Another problem occasioned in large measure by the increasing number of apartment dwellers has been to devise packages of suitable size, convenient for rapid consumption by small families who lack the facilities for preserving these products, and whose consumption is so small that if they purchased in larger quantities it would tend to restrict the variety which they might otherwise enjoy.

Having recognized this, manufacturers are faced with the fact that as the size of the package decreases the cost of packaging and the number of packages both increase.

## Development of Packaging Machines

To offset these conditions, inventors have for years been devising automatic machinery. This machinery has been to a large extent special in character, and often the result of the fertile brain of the master mechanic or engineer in the plant of the producer.

It must be said that many of the machines constructed by individual manufacturers contain ingenious motions which have been very cleverly worked out. Furthermore, the creation

of this machinery has been the result of necessity, rather than the wish of the manufacturer, who in the main, would prefer to devote his energies and talents to the manufacture of his product, and to charge others with the responsibility of manufacturing the mechanical equipment necessary to produce the desired results.

There are many reasons for this preference on the part of the manufacturer. The cost of the development work has been great. This is largely so because the machines have had to be designed from the ground up without the benefit of previous experience. Every successful automatic machine is the result of trial and development, and each manufacturer who has learned to build his own machine has had to pay dearly for this knowledge.

The machines resulting from these efforts have in many cases been highly satisfactory, but not always, and many concerns have not had sufficient production to warrant the development and construction of their own equipment.

## More Rapid Work Being Done

The demand for this equipment is, nevertheless, large and many independent engineers have been at work devising machines which would be suitable for a variety of products. Among the early wrapping machines on the market were those for wrapping tobacco, soap, and chewing gum, and an idea of the strides made in the construction of these machines may be gained by the fact that the early chewing gum machines, wrapped but twenty or thirty sticks per minute, while to-day there are machines on the market to wrap from 350 to 500 sticks per minute.

There are various types of wrapping machines, which may be divided roughly into the following classes: The chewing gum machine just mentioned represents one class in which the product itself receives the wrapper and usually a label. This class has many modifications. Among the products which in general receive the same treatment are chocolate bars, soap, tobacco, and kindred articles; but this type of machine is not applicable to any great extent to the food industry.

Bread wrapping comes the nearest to this



type, for there the article is wrapped in wax paper, which is applied directly around the article itself and which is sealed by applying heat and melted wax to the wrapper.

The wrapping of butter or margarin also falls in this class, but machines for doing this work are not generally used, although there have been several of them built, which are in more or less successful operation. However, the objection to them is being rapidly overcome, and it is to be expected that very soon, most of the large butter and margarin manufacturers will be wrapping their products automatically.

#### Improvements Still to be Made

There are still a great many improvements which may be made in the wrapping of food products, but great strides are being made in the use of automatic machinery for this purpose, which is principally due to the fact that concerns equipped to produce automatic machines are becoming better known, and have now had sufficient experience with the handling of the earlier products marketed in this way, to enable them to furnish valuable engineering services, not only in the packaging of their products but also in the process of handling it preparatory to this operation.

In the food industry there are probably more labeling machines than any other kind of wrapping machinery. These may be divided mainly into three classes. One applies a label to a round can; another labels a square cornered can, and the third applies a small label, which does not go around the package and is used more for bottles and jars than cans.

The food industry is using cartons more and more for the packing of its products, and automatic machinery is now being developed perhaps more to handle these packages than any other.

There are machines which automatically weigh into cartons given amounts of a product, while others are made to insert one or more articles into them. Both machines usually close or seal the cartons after they are filled. The machines usually received printed cartons which they fill and close. Plain unprinted cartons may, however, be fed into these machines, filled, and closed in the same manner as printed ones. These packages may then be fed into machines which automatically apply a printed wrapper to the carton. These wrappers may be applied by either the wet or dry process. By the wet process, the wrapper first receives glue over the entire surface, and is then placed around the be pasted onto the ends of the package at the be pasted into the ends of the package at the same time.

By the "dry process," the wrappers are placed around the cartons, and the fold and lap glued. These wrappers may be removed, but the wrapper applied by the "wet process" cannot be removed, as it becomes an integral part of the container.

#### The Use of Wax Paper

One objection to the use of cardboard cartons and paper wrappers is that they are to a greater or less extent not impervious to moisture. This fact has been largely recognized in the food industry, particularly by the concerns which make products which must be kept in

their original condition until used by the consumer.

To meet their requirements, machines have been developed for applying a covering of self-sealing wax paper to cartons, and then passing the packages through heated plates which hermetically seal the wrapper, thus forming an airtight package.

An objection to this wrapper is the fact that it somewhat destroys the "sharpness" of the printing on the package. Another is the fact that the wax collects dust and packages soon acquire a somewhat dingy appearance, and is it is necessary to use heat in order to seal this paper, the melted wax from the paper has a tendency to smear the package beneath the places where the wrapper is sealed.

To overcome this objection, machines have been developed for applying wrappers of glassine paper instead of wax paper. There are two types of these machines now on the market. One feeds the glassine paper from a roll and the other from sheets. In either case, the glassine paper may contain printing, but the printing on the paper fed from rolls will not register accurately, while that fed from sheets will register accurately.

This latter type of machine is used to a large extent in the wrapping of cigarettes, but is becoming more and more popular in the food industry, as it permits of a prominent display of advertising on the outside wrapper. This advertising is usually the trade name of the package and makes a very effective display on the shelf.

The tendency in the food industries has been more and more to standardize the size of packages and at the same time the tendency of the wrapping machine companies has been to make machines which can be made adjustable to handle various size packages, within reasonable limits, so that to-day the manufacturer of any line of standard food products will probably find that there have already been machines developed which, if they will not handle his product without change or adjustment, can readily be adjusted to take care of his product.

#### Bread Loaves Found Underweight

Results of a state-wide investigation into the weight of wrapped loaves of bread reported to Doctor Eugene H. Porter, Commissioner of Foods and Markets of New York State, show that more than 50 per cent of the wrapped loaves tested were short from one-half ounce to one-half pound of the weight marked on the wrapper. A total of 1137 loaves were tested and of this number 680 were short weight, 289 overweight, and 168 were correct.

In commenting upon this condition, Director W. T. White of the Bureau of Weights and Measures, said that the survey was conducted with the object of showing actual conditions existing generally throughout the State in the sale of bread and that the results demonstrate the need for uniform standard weight loaves. Of the 1137 loaves tested there were ten different sizes ranging from twelve to twenty-four ounces. Thirty-one per cent of the loaves varied in size from one pound four ounces to one pound six ounces each.







# EDITORIAL

## Need For Uniform Food Laws is Again Emphasized

THE need for uniformity in food laws is again emphasized by the attitude of Minnesota and North Dakota on the question of food colors. Either food colors are or are not injurious, and if all are agreed that they are absolutely injurious to health their use should be prohibited altogether. But the Federal Government and forty-six States have ruled that food colors are not injurious, when properly used, and the consumer is safeguarded by Federal and State laws which require labeling.

Now Minnesota and North Dakota attempt to prohibit their use entirely in all foods offered for sale within those States. The endless confusion which this and other similar discrepancies in our food laws are creating for food manufacturers, wholesale grocers and others calls for action to hasten the adoption of uniform laws and regulations.

THE AMERICAN FOOD JOURNAL knows of no more important or perplexing problem facing the food industry, yet we know of no definite steps that are being taken to correct the situation. The Association of American Dairy, Food and Drug Officials, at its last annual convention in October, endorsed the suggestion of its president, Mr. Frary, that steps be taken toward bringing together representatives of manufacturers, wholesalers, retailers, food control officials and others interested in an attempt to work out uniform laws, and this plan met with the approval of various leaders of thought in the food trades who have been trying for years to find a solution for the problem. Yet, to our knowledge, nothing further has been done, and the whole subject remains just about where it was a year ago. The Calder bill is still in the hands of a congressional committee, but there was so much opposition to it that Washington advices are that no strong efforts are being made to bring it to life again.

Difficult as it may be to harmonize the views of the many who are interested in uniformity in food laws, there must be a solution. THE AMERICAN FOOD JOURNAL believes it to be a question that should be solved with the least possible delay.

## Greater Recognition of the Value of Trained Dietitians

A CERTAIN large food manufacturing plant not long ago found that it was losing a great deal of production in the one or two hours following the lunch period. The company had its own employees' restaurant, in which no scientific feeding plan had been worked out, and so, at the suggestion of a diet expert employed a graduate dietitian, who was placed in charge of the restaurant. The results were remarkable. Within a few weeks a change occurred; the change was directly traceable to the improved character of the diet.

This is by no means an extreme case and the illustration can be carried further. A certain large rubber manufacturing company found that in one of its plants the employees were achieving production records that other plants were not duplicating. It developed that the manager of the plant making the best production record had installed a dietitian as manager of its employees' restaurant, with the gratifying results indicated. Today this company has a scientific diet for its employees in all plants.

A Chicago hotel catering to families has established a special children's dining room in charge of a dietitian who has specialized in diet for children. Some of the large hotels in New York City are now employing dietitians and the opportunities for trained workers in this field are rapidly growing. Those closely in touch with this phase of food work say that within the past few years there has grown up a much wider recognition of the value of scientific feeding, and this has created openings for dietitians which cannot yet be filled.

In hospitals the dietitian has advanced to a point where she is recognized as member of the staff and in the best institutions of this kind her advice in dietotherapy is more freely accepted. She has advanced from a position of kitchen adviser to one of scientific consultant.

Food manufacturers are likewise showing that they place a greater valuation upon the services of the trained dietitian. She is more frequently employed as adviser or as manager of the service department. Because of her knowledge of food products she is in better position than a salesman to introduce her firm's products into hospitals and other institutions and her advice on foods is frequently accepted by women's clubs and other organizations which are prominently identified with problems of proper diet.



# C O M M E N T

## The New Secretaries of Agriculture and Commerce

WHILE it is not properly a function of a non-political publication, such as this, to discuss political appointments, we feel the call upon us to commend the selection by President Harding of those two Cabinet officials whose work comes closest to the problems of the food industries. These departments are the Department of Agriculture and the Department of Commerce.

Of the two men appointed to these cabinet positions, the better known is Herbert Hoover. As a mining engineer-economist-organizer, who has made a signal success in his work, both professionally and financially, Mr. Hoover was comparatively little known outside of the mining field until he was called to the post of Food Administrator during the war. With a mind trained to organization problems, Mr. Hoover gained such a broad knowledge of food production and distribution through this experience that he may now be regarded as much of a food economist as a mining engineer. A Food Research Institute, to be established at Leland Stanford, Jr., University, by the Carnegie Foundation, which may be called the Hoover Institute, through the fact that it was Mr. Hoover's suggestion, will identify the new Secretary of Commerce more closely with the food field.

As Secretary of Commerce Mr. Hoover will bring his great organizing abilities to a department of the Government which is sorely in need of constructive effort. One greatly needed reform is to place all consular representatives of the United States under the supervision of the Department of Commerce rather than the State Department, for they are more truly business agents than diplomatic representatives of this country.

It is fortunate, too, that Mr. Hoover is to have a free hand in the conduct of the department, which can be made of great value to American manufacturers in all lines in the development of foreign trade.

As an editor of a farm paper, Secretary Meredith brought to the Department of Agriculture a broad knowledge of agricultural problems, and it is noteworthy that President Harding has selected another farm paper publisher, Mr. Wallace, for the same position. Mr. Wallace has been in day-to-day touch for many years with the problems of food production and distribution. His administration of the Department of Agriculture ought to prove one of the best this important phase of Government work has ever had.

## Newspaper Attacks on the Wholesale Grocer and How They Can Be Combated

THE report of the Publicity Committee of the New York Wholesale Grocers' Association, submitted at the recent convention, seemingly would indicate that if the wholesale grocer has not always received a "square deal" in the public press it has to some extent been his own fault. The wholesaler, says the committee, has been "so cocksure of his right to occupy a place in the distribution of foods that at first he did not believe that any possible attack could be made upon him as an economic factor. Later, when for certain reasons unknown to him, attacks were made upon him, he thought that his right to occupy that position was so apparent that the attacks could not possibly be successful."

This committee declares that the wholesale grocer has been asleep, and that it is now up to him to prove to the public what he thought was as clear as crystal, namely his right to be a cog in the machine of food distribution.

Paid publicity is the remedy which the committee would apply to undo the harm that undoubtedly has been done. Many suggestions have been made as to the proper course of this publicity, but the one which most appeals to those wholesalers who have given the subject considerable thought is that those who have made a study of publicity should be employed to set the wholesaler right before the public.

Much good has been done in local districts by wholesale grocers who have obtained the publication of articles in daily newspapers. A concrete example of this is to be found at Ogdensburg, New York, where a daily paper published an article last year, charging profiteering in sugar by local wholesale grocers. Mr. F. D. Wallace of the St. Lawrence Wholesale Grocery Company immediately proceeded to the United States District Attorney, who started an investigation which resulted in the publication of a subsequent article in which the jobbers were clearly and completely exonerated. Since that time no upon the wholesale grocers of that district.

An article which appeared last year in the *New York World* attracted such nation-wide attention that the press of the entire country virtually copied the same material. No less a national figure than William Jennings Bryan made the charge at the Democratic National Convention last summer that as the jobber was organized in a way "to throttle the poor consumer, National legislation should be had to correct this evil."



## Builders of American Food Industries



C. E. MARTIN

President, Acme Packing Company, Chicago

THE recent consolidation of the Acme Packing Company and the Indian Packing Corporation directs particular attention to the man who has been largely instrumental in building up this new organization from a \$10,000 corporation to one whose capital stock is now \$12,000,000. All this has been accomplished within twelve years.

A little more than sixteen years ago the president of the Acme Packing Company, C. E. Martin, was working as a canned meat salesman for the G. H. Hammond Company at the princely salary of \$15 a week. He quickly demonstrated his ability and was soon transferred to New York State, where he supervised the work of several salesmen, later being made sales manager of all of the territory east of Buffalo. Capability, loyalty and hard work soon after won him an appointment as general manager of sales, with headquarters in Chicago.

In February, 1909, Mr. Martin struck out for himself in a very modest way.

He capitalized the Acme Packing Company at \$10,000 and with the "Red Crown" brand, which since has become well known, he laid the foundation for the present large business. From a \$10,000 capitalization the company's first increase in stock was to \$20,000; the second increase was to \$350,000 and the third to \$700,000. The fourth increase to \$12,000,000 was to provide for the Acme-Indian consolidation.

Today the Acme Company has plants at Chicago, Green Bay, Wis., and Providence, R. I., and its products include "Red Crown" and "Council" brands of canned foods, including meats, jellies, jams, preserves, California fruits, mince meat, pork and beans, catsup, vegetables, etc.

To many in the trade Mr. Martin is familiarly known as "Charlie" Martin. His friends say his formula for success in the canned meat business is a simple one: "At least 90 per cent hard work."



# FOOD CONTROL DECISIONS

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## The Right of Federal Food Inspectors to Demand Formulas

FLAVORING manufacturers have been concerned recently by the demands of Federal food inspectors for the formulas used at the factories. In some parts of the country the inspectors have demanded the books of the company and lists of customers and shipments made.

At the request of President Joyce, Thomas E. Lannen, general counsel of the Flavoring Extract Manufacturers' Association of the United States, made the following expression of opinion which is printed in a circular to members:

"There is not a phrase or a word in the food law which, even by the most strained construction, can be considered as conferring such power. The word 'inspection' does not occur anywhere in the National Pure Food Law, and there is nothing in it which, even by implication, makes provision, so far as the States are concerned, for the supervision over manufacturing processes or for the inspection of establishments where food products are stored or sold prior to interstate shipment. All through the act the 'original package' is referred to, and except possibly as to the District of Columbia, the territories and insular possessions, it is the finished product, after or when it is actually delivered for interstate shipment, which the law assumes to control, and nothing else.

"It is clear that Congress possessed the right to provide for the supervision of stores and factories in the District of Columbia, the territories and our insular possessions, but it is equally clear that it could not constitutionally authorize such supervision in the States. Therefore, any attempt within a State on the part of the Federal officials to enter private establishments for the purpose of inspecting or superintending the manufacture, sale or storage of any product made in that State would be a usurpation.

"It is plain that the right of Congress to regulate interstate and foreign trade does not carry with it the right to supervise or inspect the factories or stores in which food and drug products may be manufactured or sold. In fact, no pretensions to the exercise of such a power was made in the Food and Drugs act. I believe, therefore, that the declared purpose of the Department of Agriculture to do this thing is wholly unauthorized and cannot be legally enforced, insofar as the States are concerned.

"If a United States food inspector wants to go through any factory, located in any of the States, or take away any products or materials ask him for his authority. If he can produce some order of court, such as a search warrant or other order of court, authorizing him to go through your place or take possession of any of your products or materials or books, etc., it is advisable to respect such a court order. Always respect any court order, at least do not disobey it without consulting an attorney. But if the inspector can show no authority other than the

mere fact that he is a United States food inspector then he has no more right than a private citizen would have to go through a factory or take away any of your products or materials, formulas, books, etc.

"I am all the more assured that the foregoing opinion is correct by the following excerpt from the report of the United States Secretary of Agriculture dated November 15, 1920:

The department should have power to inspect establishments in which foods or drugs are prepared for interstate or foreign commerce, or for sale in the District of Columbia or the territories, in order to ascertain whether the articles are adulterated or misbranded; and the misbranding provisions of the act should be extended to food containers so made or shaped as to be likely to deceive or mislead the purchaser as to the quantity, quality, size or origin of their contents.

"If the department now has the power claimed by these inspectors who are going around entering establishments, etc., demanding information, etc., to which they are not entitled, why should the Secretary of Agriculture be asking Congress to give him that power? If he has the power now he does not need any further legislation along those lines.

"Members should bear in mind the fact that the foregoing opinion deals only with United States food inspectors and is not intended to and does not apply to State or city inspectors. State food inspectors, as a general proposition, have the right to enter any food manufacturing establishment in their own State and make an inspection of the same and demand and receive samples of the food products being manufactured in such establishments. They also have the right, as a general rule, to break open any box, package, etc., which they may suspect of containing adulterated or illegal food and make a proper inspection of the same."

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### Adulterated Butter to be Taxed 10 Cents a Pound

The Democratic Administration went out of existence without changing the adulterated butter decision. The decision means that a grade of butter made from decomposed or rancid cream or from cream containing a high percentage of acid, which is neutralized or deodorized before churning, with the addition of chemicals, is in reality "adulterated" butter within the meaning of section four of the Act of May 9, 1902.

The ruling was made by the attorney general, A. Mitchell Palmer, shortly before his retirement from office, and hearings were held in February, at which all those interested in the matter were given an opportunity to be heard.

Internal revenue officials estimate that fully 75



per cent of all of the butter sold in large cities will come within this ruling. The ruling will increase the revenue of the Government approximately \$50,000,000, it is estimated. It becomes mandatory for such butter to be marked "adulterated" in conformity with pure food laws.

Creameries in all parts of the country are affected. The total butter production of the United States is about 1,600,000,000 lbs. yearly. Of this quantity about one-half is classified as ranch or farm butter and is exempted as pure butter. Of the remaining 800,000,000 lbs., manufactured for the most part by large creamery and packing interests, more than one-half falls under the ruling of the attorney general.

The decision will necessitate close supervision over all creameries by the Internal Revenue Bureau.

### Spoilage of Goods in Stock

The South Dakota Food and Drug Department reports several tons of foodstuff condemned and destroyed in that State during the past year.

The department says: "The losses, while not approaching in quantity those of times past, are still too great to be passed over lightly and every merchant should exercise more care in handling goods and take all reasonable steps to prevent unnecessary spoilage and loss.

"The past summer seems to have been rather worse than the average as regards deterioration of cereal flours and meals. Large amounts of these goods infested with worms or weevils or both have been found during the fall months. Every lot of goods of this character received by the merchant during the summer or fall should be very carefully inspected immediately after receipt and if it is found to be in bad condition or show any signs of infestation it should be refused. Such goods should in no case be returned to the jobber or wholesaler."

It is urged that better care be taken with dried fruits, both in bulk and packages, cheese, dried and smoked meats, bakery goods and cereals: Says the report:

"For the handling of cereals it seems to be the experience of many merchants that a small room set apart for flours and meals and made mouse and rat-proof is a paying installation. Such a room should be tightly screened with fine wire screen and well ventilated. It should be frequently cleaned and the appearance of the first moth (or "miller" as they are frequently called) should be the signal for thorough cleaning and disinfection of the room.

"Another cause of much spoilage is too heavy buying during the warm months. Sometimes goods are carried over from the winter's stock into the summer, when the demand is much less. This should be avoided by all means, and if the merchant finds himself left with too much pancake flour, meals, etc., late in the spring he may find it advantageous to place such goods on sale at reduced prices rather than carry them into the summer with almost certain spoilage resulting. By taking these or other precautions the merchant may not only avoid financial loss and the likelihood of offending customers by

sending out goods not fit for use, but he can save himself the embarrassment of having in his possession goods which render him subject to prosecution under the State food law."

### Charge of Adulterated Noodles

The yellow streak in noodles and egg noodles put out by some manufacturers is made by yellow dye and not by eggs, according to the officials of the Bureau of Chemistry, United States Department of Agriculture, who are charged with the enforcement of the Federal Food and Drugs Act. Food inspectors have been instructed to watch interstate shipments of noodles and egg noodles in order to enable the Department of Agriculture to check this practice which, under the provisions of the Food and Drugs Act, is illegal.

Noodles or egg noodles as defined in the standards as adopted by the United States Department of Agriculture for the enforcement of the Food and Drugs Act contains at least five per cent of the solids of eggs. Eggs have long been considered by consumers as an essential ingredient of noodles and egg noodles. The only purpose in adding a yellow dye to noodles is to make them appear to contain eggs, say the officials. A yellow dye adds nothing to the taste or the food value of the noodles. Most consumers in purchasing yellow noodles expect to get noodles containing eggs.

There is one kind of noodles which are not supposed to contain eggs. They are commonly called "water noodles" or sometimes "plain noodles." Such noodles are not dyed yellow, so the fact that they contain no egg is apparent to purchasers. The use of yellow dye which costs little in place of eggs which cost real money, is not only a fraud upon the consumer, but makes unfair competition among manufacturers, according to the officials of the Bureau of Chemistry. It is difficult for reputable manufacturers of unadulterated noodles to meet the competition of the cheapened product whereby the consumer receives an article that contains foreign coloring matter and much less nutritive substance than the genuine noodles he expects to receive. Where the output of a factory is large the profits made by substituting yellow dye for eggs may be very great.

### Forbids Misbranding Corn

The Bureau of Chemistry of the Department of Agriculture has decided that the term "golden bantam corn" on labels should be restricted to that particular variety. It is explained that in many instances other canning varieties known as Charlevoix, bantam evergreen and other yellow corns are labeled as golden bantam corn.

In interstate shipments of varieties of corn other than golden bantam under labels indicating the product to be of the golden bantam variety such products will be regarded by the bureau as misbranded under the Federal Food and Drugs Act. In view of the fact that canners at this season are placing orders for labels for use on the 1921 pack it is important that this information be generally known.



# FOOD LEGISLATION

## Bill to Change Name of Oleomargarine to Margarin

Hearings will be held soon by the Committee on Agriculture of the House of Representatives at Washington on the Dyer bill (H. R. 13593) "to change the name of oleomargarine to margarin; to change the rate of tax on margarin; to protect the consumers, dealers and manufacturers of margarin against fraud, and to afford the Bureau of Internal Revenue more efficient means for the detection of fraud and the collection of the revenue."

The text of the bill follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purposes of this act certain manufactured substances, certain extracts, and certain mixtures and compounds, including such mixtures and compounds with butter, shall be known and designated as "margarin," namely: All substances heretofore known as oleomargarine, oleo, oleomargarine oil, butterine, lardine, suine, and neutral; all mixtures and compounds of oleomargarine, oleo, oleomargarine oil, butterine, lardine, suine, and neutral; all lard extracts and tallow extracts; and all mixtures and compounds of tallow, beef, fat, suet, lard, lard oil, vegetable oil, annatto, and other coloring matter, intestinal fat, and offal fat made in imitation or semblance of butter, or when so made, calculated, or intended to be sold as butter or for butter.

Sec. 2. That special taxes are imposed as follows:

Manufacturers of margarin shall pay \$600 per annum. Every person who manufactures margarin for sale shall be deemed a manufacturer of margarin.

Wholesale dealers in margarin shall pay \$200 per annum. Every person who sells or offers for sale margarin in quantities in excess of ten pounds at one time shall be deemed a wholesale dealer in margarin. Any manufacturer of margarin who has given the required bond and paid the required special tax, and who sells only margarin of his own production, at the place of manufacture, shall not be required to pay the special tax of a wholesale dealer in margarin on account of such sales.

Sec. 3. That every manufacturer of margarin shall file with the collector of internal revenue of the district in which his factory is located such notices, inventories, and bonds, shall keep such books and render such returns of materials and products used in his business, shall put up such signs and affix such number of his factory, and conduct his business under such surveillance of officers and agents as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may, by regulation, require. Such books shall be open to the inspection of any internal-revenue officer or agent. Whoever fails to keep such books or render such returns in relation to his

business as required by the regulations of the Commissioner of Internal Revenue, approved by the Secretary of the Treasury, or intentionally makes a false entry in such books or returns, shall be fined not more than \$500 or be imprisoned not more than six months, or both. The bond required of such manufacturer shall be approved by the Collector of Internal Revenue, and be in a penal sum of not less than \$5,000; and the sum of said bond may be increased from time to time, and additional sureties required, at the discretion of the collector, or under instructions of the Commissioner of Internal Revenue.

Sec. 4. That all margarin shall be put up by manufacturers in their factories in cartons or and ten pounds, and in no larger or smaller in other packages of one, two, three, four, five, subdivisions. Every manufacturer of margarin shall seal each carton or package with the strip coupon stamp hereinafter provided for, and shall brand or print on each carton or package, or securely affix by pasting on each carton or package containing margarin manufactured by him, a label or labels on which shall be printed the word "Margarin" in letters which shall be plainly legible, the internal revenue number of the factory, the district and State in which it is situated, and in addition to all other requirements of this Act relating to margarin these words:

"Notice.—The manufacturer of the margarin herein contained has complied with all the requirements of law. Every person is cautioned not to use either this package again, or the stamp thereon again, nor to remove the contents of this package without destroying said stamp, under the penalty provided by law in such cases."

Sec. 5. That upon margarin which shall be manufactured and sold, or removed for consumption or use, there shall be assessed and collected a tax of 1 cent per pound, to be paid by the manufacturer thereof. Reasonable tolerances or variations from the stated weight for individual cartons or packages are permissible (a) when such variations are due to changes in the humidity of the atmosphere, from the exposure of the package to evaporation or absorption of water; (b) when such variations are due to errors attending the filling, weighing, or measuring of a carton or package, provided such variations are as often above as below the weight stated. The tax levied by this section shall be represented by suitable special strip stamps of a character suitable for sealing each carton or package denoting the weight and character of the article; and the provisions of existing laws governing the engraving, issue, sale accountability, effacement, and destruction of stamps relating to tobacco and snuff, as far as applicable, are hereby made to apply to stamps provided for by this section.



Sec. 6. That the internal-revenue stamp or stamps shall be so affixed to such one, two, three, four, five, and ten pound cartons or packages as to securely seal them, so that such cartons or packages may not be opened without destroying the stamp affixed thereto. All sales of margarin shall be only in such one, two, three, four, five, and ten pound cartons or packages labeled and stamped as above required, provided that this section shall not be construed to prohibit the use of private brands or trade-marks which have been or may be approved by the Commissioner of Internal Revenue. Every person who knowingly sells or offers for sale or delivers or offers to deliver any margarin in any other form than in the cartons or packages above described, or packs in any carton or package any margarin in any manner contrary to law, or falsely brands any carton or package, or affixes a stamp on any carton or package denoting a less amount of tax than that required by law, shall be fined for each offense not more than \$2,000, or be imprisoned not more than two years: Provided, That this section shall not apply to margarin for export.

Sec. 7. That all margarin imported from foreign countries shall, in addition to any import duty imposed on the same, pay an internal revenue tax of 5 cents per pound, such tax to be represented by coupon stamps as in the case of margarin manufactured in the United States. The stamps required by this section shall be affixed and canceled by the owner or importer of the margarin while it is in the custody of the proper customhouse officers, and the margarin shall not pass out of the custody of said officers until the stamps shall have been so affixed and canceled, but shall be put up in cartons or packages as prescribed in this Act for margarin manufactured in the United States, and the stamps likewise affixed in the same manner. The owner or importer of such margarin shall be liable to all the penal provisions of this Act prescribed for the manufacturers of margarin produced in the United States. Whenever it is necessary to take any margarin to any place other than the public stores of the United States for the purpose of affixing and canceling such stamps, the collector of customs of the port where such margarin is entered shall designate a bonded warehouse to which it shall be taken under the control of such customs officer as such collector may direct; and every officer of customs who permits any such margarin to pass out of his custody or control without compliance by the owner or importer thereof with the provisions of this section relating thereto shall be fined not more than \$5,000 or be imprisoned not more than three years, or both. Whoever sells or offers for sale any imported margarin purporting or claimed to be imported not put up in cartons or packages and stamped as provided by this section shall be fined not more than \$5,000 or imprisoned not more than two years, or both.

Sec. 8. That all cartons or packages of margarin, subject to tax under this Act, that shall be removed from the factory or offered for sale,

without stamps or marks as hereby provided, shall be confiscated by the United States. Any person who shall willfully remove or deface the stamps, marks, or brands in this Act required to be branded, printed, or affixed on any carton or package containing margarin taxed as provided herein, or who reuses such stamps, shall, for each such offense, be fined not more than \$2,000, or be imprisoned not more than six months, or both.

Sec. 9. That margarin may be removed from the place of manufacture for export to a foreign country, or for consumption upon vessels plying between ports of the United States and those of foreign countries, without payment of tax or affixing stamps thereto, under such regulations and the filing of such bonds or other security as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may prescribe: Provided, That when margarin is removed from the place of manufacture for export to a foreign country, or for consumption upon vessels plying between ports of the United States and those of foreign countries, and is marked or branded according to the specifications or directions of the purchaser, when such specifications or directions are not deceptive or fraudulent, then no further or other marks or brands shall be required; but if said margarin shall be in fact sold or offered for sale for domestic use or consumption, then this proviso shall not exempt said margarin from the operation of any of the other provisions of this Act.

Sec. 10. That whenever any person engaged in carrying on the business of manufacturing margarin defrauds, or attempts to defraud, the United States of the tax on the margarin produced by him, or any part thereof, he shall be fined not more than \$5,000, or be imprisoned not more than three years, or both, and, in addition thereto, all margarin and all raw material for the production of margarin found in the factory and on the factory premises shall be confiscated by the United States.

Sec. 11. That sections 3164 to 3177, 3179 to 3243, 3346 as amended, 3445 to 3448, 3450 to 3463, all inclusive, of the Revised Statutes of the United States, and all other provisions of existing laws relating to internal revenue, so far as applicable, are hereby made to extend to and include and apply to the taxes imposed by this Act, and to the substances upon which and the persons upon whom they are imposed. The Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may make all needful regulations for carrying into effect the provisions of this Act.

Sec. 12. That such parts of the Act of August 2, 1886 (Twenty-fourth Statutes at Large, page 209), entitled "An Act defining butter, also imposing a tax upon and regulating the manufacture, sale, importation, and exportation of oleomargarine," and such parts of the Act of October 1, 1890 (Twenty-sixth Statutes at Large, page 621), and such parts of the Act of May 9, 1902 (Thirty-second Statutes at Large, page 194, entitled "An Act to make oleomargarine and other imitation dairy products subject to the laws of any State or Territory or the



District of Columbia into which they are transported and to change the tax on oleomargarine, and to impose a tax, provide for the inspection and regulate the manufacture and sale of certain dairy products, and to amend an Act entitled 'An Act defining butter, also imposing a tax upon and regulating the manufacture, sale, importation, and exportation of oleomargarine, approved August 2, 1886,' as relate or apply to oleomargarine in said Acts defined, or to margarin in this Act defined, be, and the same hereby are, repealed.

Sec. 13. That this Act shall take effect on the 1st day of July following its enactment.

### Single Head For Food Control Suggested

Although for a number of years past food legislation has occupied an important place in the calendars of the Senate and Assembly of New York State, the present session thus far seems to be entirely barren of any important measures bearing on food subjects. There is a mass of unimportant proposals—most of them of a socialistic nature and not likely to be reported from committee—but there are practically no proposals for constructive measures and no plans under way for later introduction of a food program.

Governor Miller has made but one recommendation as to legislation affecting foods, and that was in his initial message when he urged the appointment of a single head for the Agricultural Department. At present agriculture and food control are vested in a commission of ten, elected by the Legislature, known as the Council of Farms and Markets. Under it are two divisions—they are the Division of Agriculture and the Division of Foods and Markets. An executive for each is appointed by the Governor, who, in his message, suggests a single head for both divisions.

Thus far no legislation to carry out this plan has been introduced. A plan is under discussion, however, which contemplates the creation of a special committee to make a study of the department during next summer and report a comprehensive plan of reorganization for next winter. The leaders have in mind a plan that will include the wiping out of the Council and substitution of a single head, carrying out the Governor's idea.

Aside from this, most of the legislation affecting foods and market before the Legislature deals with the subject of milk. Several measures affecting that commodity are before both houses. One of them, sponsored by Assemblyman Bloch, Democrat, of Manhattan, seeks to create a bureau of milk regulation in the Agriculture Division. Three others, by Senator Duggan, Republican, and Assemblymen Lieberman and Di Pirro, seek to create a milk commission for the same purpose. Assemblyman Antin of the Bronx, a Democrat, has introduced a bill to create a "Fair Trade Commission," which would have power to control more or less prices, profits and distribution.

A similar proposition, except that it would operate only in times of emergency, is fathered by Assemblyman William Lyman, of New York. His bill proposes that in times of emergency, the State Government be empowered to take complete control of the systems of production, distribution and transportation of milk, meat, flour, bread "or any other food necessity."

## Minnesota Codification Forbids

### Use of Food Colors

Sometime ago a Commission was appointed to codify the laws of Minnesota, and that Commission has now finished its work and is ready to offer a codification of the Minnesota laws to the Legislature.

It will provide that any food or drink shall be deemed to be illegal if it contains "coal tar dye or color."

Section four of the codification specifically prohibits the use of "coal tar dye or color" in confectionery. Saccharin is also specifically prohibited in confectionery by Section Four.

Paragraph "fifth" "in the case of food" appearing in Section Four of the codification prohibits the use of "sulphurous acid" which might be construed as prohibiting sulphur dioxide in molasses, etc. It has been recommended that the words "sulphurous acid" be stricken out of the codification so as to avoid any misconstruction. The same paragraph prohibits the use of "coal tar dye or color" or "saccharin" in all foods.

Section 15 of the codification makes it the duty of the Dairy and Food Commissioner to fix definitions and standards for foods.

Section 17 of the codification gives the Dairy and Food Commissioner authority to require by rules and regulations that any package of food shall be labeled in such manner as to plainly exhibit to the purchaser any or all of the following data or information:

- 1.—The percentages and true composition of such article of food.
- 2.—Its quality, strength, quantity, source of its manufacture or production.
- 3.—The person by whom the same is manufactured, produced, packed or shipped.
- 4.—The form, size, style, and wording of, and the place, time, method, means and manner of use of all such labels.

Under (1) above, the Commissioner would have power to require percentages to be stated on all food packages. Under (2) and (3) above the Commissioner could require that the name of the real manufacturer be shown on all labels.

### Bill Would Create Formula Commission

A commission to examine the formulas of all medical preparations, toilet articles, flavoring extracts, etc., which may contain one-half of one per cent or more of alcohol is provided for in a bill introduced in the Iowa Legislature.

No preparation containing alcohol as above can be sold in Iowa, under this bill, unless and until it has been approved by the Commission and the label shows an endorsement of approval by the board.

The commission may refuse to endorse any given preparation and the owner or seller of such preparation has no recourse.

Furthermore, the bill, it is said, would create inconvenience, delay and trouble to manufacturers and dealers in submitting their preparations and formulas for analysis.

The author of the bill is Senator J. A. McIntosh of Leon, Iowa.



## BOOK REVIEWS

### "Creative Chemistry"

When a man can write good science we can believe he is a scientist; when he can write good literature he is a man of letters; but when he can write on science and make good reading out of it, he is a genius. Edwin E. Slosson is such a man. Many readers know him already for his work on the staff of the Independent. Now there appears in book form a series of papers from his pen that will unquestionably form one of the milestones in the history of both science and literature in this country. It is so readable, so bristling with information, so thrilling with the adventures of modern chemistry that you should be introduced to it. (Creative Chemistry. By Edwin E. Slosson, New York: The Century Company.)

The object of the author in writing Creative Chemistry was to dispel the prevalent idea among non-chemical folk that chemistry is only an analyzing and tearing down science, and to show them that its really great achievements have been in the building up or synthesizing phases of the science. Man is now in the third period of development. The first is the Appropriative Period, in which he picks up what he can find in nature and uses it. The second is the Adaptive Period, in which he remodels and improves the things he finds so that they are more suitable for his uses. In the third, or Creative Period, man makes something new, better for his purpose than anything found in nature. "The savage discovers. The barbarian improves. The civilized man invents. The first finds. The second fashions. The third fabricates." In this third stage the chemist becomes conspicuous. He had made hundreds of thousands of substances which never occur in nature, and very many of which are extremely important in our highly complex civilized life. It is to these achievements in synthetic chemistry that the book is devoted.

One of the surprising things that the layman notices is the great variety of topics that can be discussed under such a heading. He comes to realize that synthetic chemistry bears upon momentous questions—the ethics of poisons in war, the independence of the Philippines, the struggle for Africa, the conservation of corn cobs, the exaltation of milady by means of rare scents, painless dentistry, the making and healing of wounds, the adventurous trips of the *Deutschland*, artificial diamonds, and so on to great length. And when that layman takes off his clothes and prepares to retire, after spending the evening with Slosson, he is very likely to look twice at his bakelite framed glasses, his cellulose acetate necktie, his artificial leather shoes, his redmanol buttons, coal tar dyed shirt, and viscose pajamas, and to say to himself or to his wife, "I guess I'm pretty narrow. I didn't know that these fool things had any romance tied up in them."

Furthermore, Slosson points out that the present American chemical industry is serious business; that an enormous amount of capital has been put into it during the last five years; that it is now in grave danger of being wiped off the face of the earth by German products, unless the present Congress passes the Longworth Bill.

There is a chapter on corn products, as well

as one on oils and fats, that is particularly timely for those interested in food products. The chapter on the rival sugars shows the history and international importance of sucrose. Berthelot is quoted as saying, "The day will come when each person will carry for his nourishment his little nitrogenous tablet, his pat of fatty matter, his package of starch or sugar, his vial of aromatic spices suited to his personal taste; all manufactured economically and in unlimited quantities." But Slosson's comment is that "there is apparently no impossibility about the manufacture of synthetic food, but at present there is no apparent probability of it. There is no likelihood that the laboratory will ever rival the wheat field—but in rarer and choicer products of nature the chemist has proved his ability to compete and even to excel."

"The history of civilization details the steps by which man has succeeded in building up an artificial world within the cosmos."

"There speaks the true evolutionist, whose one desire is to get away from Nature as fast and as far as possible. Imitate Nature? Yes, when we cannot improve upon her. Admire Nature? Possibly, but be not blinded by her defects. Learn from Nature? We should sit humbly at her feet until we can stand erect and go our own way. Love Nature? Never! She is our treacherous and unsleeping foe, ever to be feared and watched and circumvented, for at any moment and in spite of all our vigilance she may wipe out the human race by famine, pestilence, or earthquake and within a few centuries obliterate every trace of its achievement—It is by means of applied science that the earth can be made habitable and a decent human life made possible. Creative evolution is at last becoming conscious."

By all means the book should be read by everyone who pretends to read anything. Frank Crane says, "It is a book to own, to mark, to read aloud to the family." J. J. WILLAMAN,

### Laboratory Studies Processing Principles

The research laboratory of the National Canners Association is conducting a series of studies on what it regards as the fundamental principles of processing. The first of these studies, the penetration of heat into the center of the can during processing, was discussed in a bulletin published by the laboratory some months ago. The second study has reference to the acidity of canned foods, or of the water, syrup or brine of canned foods during processing.

It is well known that the time and temperature necessary to sterilize foods depends among other things on the acidity of the food. In the case of foods put up with water, syrup or brine, the bacteria are usually in the liquor, rather than in the solid particles of food. In such cases it is important to note the acidity of the liquor.

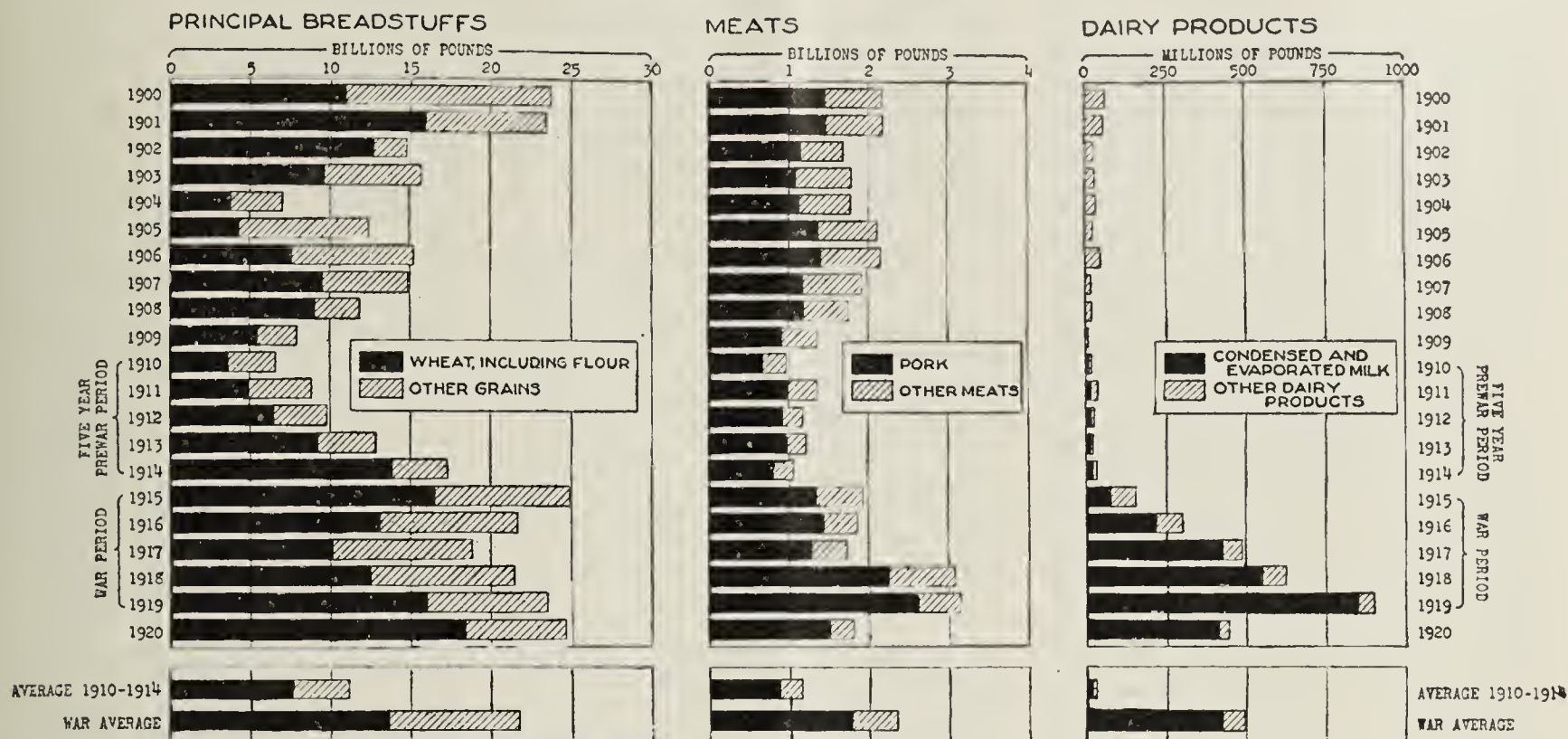
It has been demonstrated that this acidity changes to a considerable extent during processing. The extent of this change is being studied by the research laboratory.

A preliminary statement of the results thus far obtained are given in Bulletin 17-L, a copy of which may be obtained by requesting it of the Research Laboratory of the National Canners Association, 1739 H St., Washington, D. C.



# NEWS OF THE FOOD TRADES

## Exports of Foodstuffs From 1900 to 1920



The graphic chart published above shows the exports of the leading foodstuffs from the United States for the calendar years 1900-1920. The chart was originally published in The Market Reporter for July 10, 1920, and has been revised so as to include the necessary data for the calendar year 1920.

It will be observed that the figures for 1920 show a marked decline from 1919, when exports of dairy products and meats including meat products,

amounted to 901,581,620 and 3,151,230,027 lbs. respectively, as compared with 448,029,285 lbs. of dairy products and 1,799,597,740 lbs. of meat and meat products exported in 1920.

Our total exports of breadstuffs in 1920 amounting to 24,706,460,696 lbs., although slightly more than our 1919 exports were exceeded in 1915 when 24,981,408,344 lbs. of breadstuffs were exported. This decline was primarily due to lessened exports of corn and

oats. The exports of wheat and wheat flour which amounted to 307,623,015 bus. in 1920 exceeded those of any previous year. The exports of rye for 1920, amounting to 59,252,966 bus., also exceeded those for any previous year. It is to be noted that the exports for the years represented by the accompanying chart are based upon calendar years. Our exports of breadstuffs have heretofore been reported according to fiscal years.

### Asks For a Tariff on Reindeer Meat

Carl J. Lomen, mayor of Nome, Alaska, recently appeared before the Ways and Means Committee of the House of Representatives to ask for tariff protection for the reindeer raised in Alaska. Less than twenty years ago, Mr. Lomen stated, 171 reindeer were brought across the Behring Straits from Siberia. These have multiplied until today they number more than 200,000, representing an investment of several hundred thousands of dollars. According to Mr. Lomen, the reindeer herds are growing so rapidly that in another ten years they will number 1,000,000, and in fifteen years they will reach 4,000,000, which is about as many as Alaska is capable of supporting.

"The reindeer industry," Mr. Lomen told the committee, "is one of the most promising and most important of our Alaskan industries, and with proper development its annual output of meat within fifteen years will exceed in value the present gold and fisheries industries of the northern territory. A large and increasing surplus of reindeer meat is now available each year in Alaska, and this surplus must be

sold within the borders of the United States.

"It is a new meat product and we need to develop a special market to absorb it. Those engaged in the development of the industry are making shipments of this meat to sections of the United States to introduce and familiarize the public with the product and to create a demand necessary to absorb the great supply of this food product which will be available. To make possible the continued sale of Alaskan reindeer meat on the Eastern markets of the United States it is necessary that a duty be placed upon reindeer meat shipments from Northern Europe. That is based on statements made to me by commission dealers in New York city that they could land reindeer meat from Norway at a lower figure than it is necessary for us to ask for the Alaskan product."

Mr. Lomen informed the committee that a 30 per cent. ad valorem duty would be necessary to protect the American reindeer. Representative Longworth wanted to know something about the flavor of reindeer steak.

"It is finer meat than venison," Mr. Lomen said. "I class it between beef and mutton. It has a distinctive flavor. It is a domestic meat, of course, and not a game meat, as it is often classed."

### Reconstruction of Sugar Refineries in France

The refining of sugar in northeastern France was particularly affected by the war. Nearly all the French sugar refineries were located in the Departments of Aisne, Ardennes, Marne, Nord, Oise, and Pas-de-Calais, and in these regions sugar beets were raised in enormous quantities. Of 217 refineries in France, 170 were established in these Departments, and 145, valued at \$50,000,000 prior to the war, were destroyed.

The annual pre-war production, which averaged approximately 750,000 tons, fell to 180,000 tons. The present production amounts to about 300,000 tons. Immediately after the war refiners showed some hesitancy in regard to rebuilding their establishments, but work is going on rapidly at present, and it is expected that practically all the refineries will be in operation in 1925. Of the 47 destroyed in the Department of the Aisne, 22 will resume operation in the course of the present year.

The general and executive offices of the Acme Packing Company have been removed from Chicago to Green Bay, Wis.



## Defends Procter & Gamble Plan

### Official of Company Says He is Convinced of Its Wisdom--- Replies to Dr Haney's Address

In reply to the address of Dr. Lewis H. Haney, director Bureau of Business Research, New York University, before the New York Wholesale Grocers Association, which was published in the February issue of THE AMERICAN FOOD JOURNAL, H. G. French, vice-president, Procter & Gamble Co., Cincinnati, Ohio says in a letter to the New York Journal of Commerce that his company is convinced of the wisdom of this method of distribution as applied to its own products. He says further:

"It is not our wish to enter into a discussion with Professor Haney, nor to criticize his opinion, but merely to give a statement of actual conditions as they are today for the benefit of those who are genuinely interested. We do not argue as to the wisdom or soundness of direct selling on the part of the soap industry—we merely state that so far as this company is concerned we feel that the measure of its success is in two factors:

"First—The number of dealers throughout the country who are selling our product to the consumer.

"Second—The volume of sales.

"As to the first factor, we have not lost distribution as the result of the move; there has been a definite, though not a large gain in the distribution of our prominent brands, and there has been a slight loss in the distribution of our less prominent brands; we think this is true of all less prominent brands in the country. In any event we feel that we can state positively that the change in our selling policy has not resulted in decreased distribution of our products nor in a lessened number of dealers from whom the consumer may buy.

"As to the second factor, volume, a comparison by weeks of our soap business since January 1 of this year with the average week for the year ended June 30, 1920, that is, the year prior to the date upon which we made our change, indicates a larger volume, with almost a uniformly steady increase each week. In short, so far as our soap business is concerned, we can say without hesitation that its volume and growth are quite satisfactory.

"The vegetable cooking fat situation since January 1 has been disturbed as the result of the extraordinary low price of lard, taken in conjunction with a consistently declining market on all cooking fats. The volume of our cooking fat business has been below normal, but we attribute this entirely to general conditions, and not in the slightest to our change in selling plan.

"We have established ourselves with the retail trade during the eight months of our experience in a way which is most satisfactory to us. As nearly as we can estimate it we have on our books the accounts of approximately 80 per cent of the retail grocery dealers of this country, and from reports which we have received from our customers we feel that the plan is proving satisfactory to them. The confusion which attended the early stages of the move has been ironed out and the organiz-

ation is functioning smoothly and effectively."

William H. Crawford, St. Paul, Minn. purchasing agent for a number of individually owned chain stores, also has replied to Dr. Haney's address in a letter to the Journal of Commerce. He says:

"The article seems, to one who has been a large purchaser of many brands of soap and soap products, including those brands of the manufacturer in question, to be biased opinion for the reason that Professor Haney has made his conclusions from a questionnaire received from one of the principals in the controversy and representative of an interest directly opposed to direct marketing regardless of the economic principles involved, and must be considered by those interested as of questionable value.

"No one with an open mind can help but question the sincerity of Professor Haney when he attempts to spread insidious propaganda and by innuendo create an antagonistic feeling against the manufacturer who chooses to market his products direct to the retailer. The wholesale grocer cannot be relied upon to give authentic information relative to the success or failure of the marketing of the products in question, as he does not sell or distribute the P & G. products, and any data received from jobbers' salesmen must be considered biased and of no particular value. Only those retailers who sell P. & G. products and the P. & G. people themselves can give a proper answer to Professor Haney's questionnaire. The conclusions by Professor Haney relative to volume of business, promptness of deliveries and requirements of purchase, etc., are out of line with the facts as applied to conditions governing the sale of P. & G. products in this territory. If the question of the marketing of P. & G. products is one of economics the great university of the State of New York should not allow its Bureau of Business Research to come to a hurried conclusion without giving all parties to the controversy their day in court.

"Wholesale Grocers Reap What They Have Sown.—No doubt there are many ethical wholesale grocers who function properly through the regular channels of trade, but any retailer who has purchased his requirements through many trade channels must be familiar with the double trade policies of a large number of wholesale grocers. If you have been a buyer with a reasonable outlet and took the time to go shopping, most any kind of a price or discount could be secured on nationally advertised products from so-called legitimate jobbers. Just these irregularities have forced many reputable retailers, both large and small, to go outside the established channels in order for them to meet competition created by the unethical jobber and manufacturer. The middle class of retailers, both in cities and country towns, who are most affected, supply about 75 per cent of the requirements of the consumer, and

it goes without saying that they will welcome any plan that will standardize distribution. The manufacturer who features his advertised products through the regular wholesale grocer must know that the manufacturing wholesale grocer and those who feature their private brands cannot be depended upon to give them their full hearted support as one plan is directly opposed to the other, and judging the future by the past they can never be reconciled. Anyone who has made a careful study of distribution must come to the conclusion that the wholesale grocers themselves are responsible for many of the vexing problems that have recently appeared. There is not the least doubt that these tactics on the part of wholesale grocers have forced many ethical manufacturers to go direct to the retailer for self protection.

"Unless the wholesale grocer as an institution of distribution can come into court with clean hands all the insidious propaganda and publicity they can use cannot blot out their iniquities in the public mind nor can they by innuendo relieve a chaotic condition.

"The first principles of Americanism must not be violated. No one faction in the controversy can be ruled. Freedom of thought and freedom of action must govern. The manufacturer who desires to market his products direct must have the right of self-determination. The manufacturer who prefers the wholesale grocer as his logical distributor must remain 100 per cent loyal to his choice.

"The question in economics can only be solved by the natural law of 'he who serves best profits most,' and while it would appear that there will be glory enough for all, the principle of the 'survival of the fittest' must govern."

### Suggests Co-Operative Jobbing Houses For Food Manufacturers

A well known sales manager writing for Printers Ink says:

Twenty-five years ago it was not difficult to distinguish between manufacturers, jobbers and retailers. Jobbers performed the services of stocking the goods of many manufacturers in convenient localities, introducing new lines to retailers, extending credit where deserved and shipping in such quantities as the retailers could use. Retailers bought of jobbers and sold to consumers. Manufacturers distributed through jobbers with satisfaction and economy and without friction.

But what of today? Jobbers are now manufacturers. Retailers, through associations and buying exchanges, are jobbers in every sense of the word. Many of them insist on handling their own brands and assume the role of manufacturer. Chain stores are in many cases manufacturers, and in others both manufacturers and jobbers. Manufacturers are in some cases their own jobbers.

Such a complicated situation is impossible of clarification, and fighting over it will produce nothing but further unrest and bad feeling. Hence it is better, in my opinion, to face the situation as it is, and try for a solution with a full recognition of the facts.

Organization has been the means by



which all classes of trade have been brought to their present state of efficiency. Jobbers have their associations, retailers have theirs and chain stores operate under one head, buying and distributing from centrally controlled warehouses; the only party left out of this general scheme is the manufacturer; he still, apparently, prefers to go it alone, hiding his head in the sand, blind to what is going on around him, and thankful that none of this affects his interests.

Standard goods, as they are called, usually mean the lines which represent long service to the public, backed by consistent advertising to fix the branded name and make them known to all people in all places. They are the goods which have a value because of the confidence consumers have in them, over and above the cost of production.

Manufacturers of such lines have in a general sense developed a market where before their advent no market existed; witness Welch's Grape Juice, Bon Ami, Burnett's Vanilla, Cream of Wheat, etc.

What market has ever been made by a jobber? What food product has ever been originated by a jobber? No national advertising for a food product has ever been done by a jobber. However, if the jobber functions in any other way than in wholesaling or jobbing goods, he becomes a competitor to be reckoned with.

Manufacturers Handicapped

Manufacturers who distribute through these jobbers that have brands of their own are placed in the position of asking their competitors to support them. Jobbers who expect manufacturers to create a market so that eventually they can step in and supply that market with their own private brands, are helping to confuse and further complicate a situation which is already a serious problem to both sides of the case.

I never expect to see the day when the real jobber will be no more. He occupies a position in distributing merchandise that is beyond question both economical and efficient; but I do expect that the time will come when the manufacturing jobber will have to operate actually with only his own brands, just as one representative house is now undertaking to do.

Let us accept the present situation as it is, and let the manufacturers do a little organizing on their own account.

Say for a beginning twenty manufacturers of standard lines conclude to do their own distributing; in other words, go into the jobbing business.

They meet and decide on the logical distributing points; they appoint a manager at each point, they start operations, not individually, but collectively, under a name, say the Specialty Warehouse Company, each manufacturer to carry goods owned by himself at the Specialty warehouse. To segregate such items as rents, salaries and expenses in proper proportions among the individual manufacturers is simply a matter of bookkeeping.

What would happen is this: Salesmen hired by the Specialty Warehouse Company would canvass all districts at stated intervals for the company, would sell only such items as were

carried by that firm and take their orders for shipment from warehouses exactly as the jobbers are now doing.

The merchant would have to establish his credit only with the Specialty Warehouse Company, and not with the individual manufacturers; such dealers as have no credit rating could be handled on a cash basis, or if the demand created were strong enough so that he must have the brand, he could place his order with a local jobber, who, in turn, could pick up the goods from the warehouse company.

The latter would not refuse to sell jobbers, but rather would be glad to; only on an entirely different basis from the one on which distributing is now being done.

The jobbers who would only pick up goods from the warehouse to fill orders, and who were recognized manufacturers with competitive brands of their own, would receive pay for just the service rendered; while jobbers who really co-operated by quoting the lines, carrying stock, etc., and functioning in the regular jobbing way without competitive brands of their own, would receive pay in proportion to such services.

Such organized distribution would not preclude an individual manufacturer from sending his own men into the field if he wished; in fact, nothing that now exists, as I see it, would be changed in any way.

It would simply mean the taking over by the manufacturer of the full control of his own distribution; and a full enjoyment of such markets as he could build by consistent advertising of his branded article. Only, instead of going it alone, as in the case of Procter & Gamble, twenty, or as many as joined forces, would have the combined capital and facilities to resist the further encroachment on the markets that have been made for standard advertised goods, and which markets are constantly being undermined by those on whom the manufacturer now depends to help him retain what he has built.

Prune Association Will Pack Fruit in East

The California Prune and Apricot Growers, Inc., San Jose, Calif., will process and pack both prunes and apricots in New York, according to a recent announcement by H. G. Coykendall, general manager. Space has been engaged in the Bush Terminal Building, Brooklyn, and machinery for processing and packing is being installed. The space leased is ample to take care of the trade of the East and export shipments as well. The Eastern plant will be ready for operation about May 1.

Calumet Baking Powder Buys Chemical Plant

Growth of the Calumet Baking Powder Company of Chicago is indicated by its purchase of the Superior Chemical Company's large plant at Joliet, Ill. Two of the important ingredients which enter into the making of Calumet baking powder were manufactured in this factory. The purchase price was approximately \$1,000,000. The patented and secret processes of manufacture were included in the sale.

Fish Products Imported From Norway in 1920

The statement of exports of fish products from Norway for the year 1920, as compiled by the office of the Directory of Fisheries at Bergen, is given in a report of George Nicholas Ifft, U.S. consul at Bergen. These statistics cover only quantity. Local units of quantity have been retained, and it should be noted that a barrel of salt herring or other salt fish varies from 100 to 120 kilos net, or from 220 to 265 pounds; a barrel of cod roe contains 98 kilos, or 216 pounds; a barrel of cod-liver oil, 116 liters, or 30 gallons, and a case of fresh fish 70 to 80 kilos, or 154 to 176 pounds net, 25 per cent being allowed for ice.

The following table shows the quantity exports of fish products for the whole of Norway for 1920:

Articles.	Norway.
Herring, salted—	
Spring herring, bbls .....	1,222,038
Fat herring and bellicut, bbls. ....	192,860
Large herring, bbls. ....	849,724
North Sea herring, bbls. ....	533
Iceland herring, bbls. ....	29,148
Sprats, bbls. ....	1,272
Dried fish—	
Cod—Klipfish, kilos .....	37,674,608
Klipfish, Iceland, kilos .....	196,310
Round, kilos .....	9,452,844
Raaskjaer, kilos .....	511,019
Sei (coalfish), split, kilos .....	3,612,838
Haddock, round, kilos .....	1,313,679
Other stock fish, kilos .....	850,299
Cod roe, bbls. ....	35,100
Codliver oil—	
Steam refined, medicinal, bbls .....	42,736
Raw, medicinal, bbls. ....	4,619
Bright, bbls. ....	1,878
Bright brown, bbls .....	4,375
Brown, bbls. ....	5,600
Oil of Greenland shark, bbls. ....	368
Oil of bottlenose whale, bbls. ....	1,104
Whale fat, refined, bbls. ....	3,828
Whale oil, bbls. ....	1,764
Seal oil, bbls. ....	21,646
Herring oil, bbls. ....	56,867
Smoked herring, kilos .....	230,272
Salted mackerel, bbls. ....	26,979
Salted Cod—	
In bulk, kilos .....	3,399,384
In barrels .....	9,143
Fresh fish—	
Herring, cases .....	613,600
Mackerel, kilos .....	243,818
Salmon, kilos .....	260,681
Eel, live, kilos .....	91,236
Other fresh fish, kilos .....	1,164,713
Lobster, live, number .....	374,682
Herring flour, kilos .....	26,780,900
Fish fertilizer, kilos .....	8,112,904
Canned fish, kilos .....	20,119,793

As an indication of the value of these exports, the declared annual export return of fish products from Bergen to the United States for the year 1920 is noted below, giving quantities in local terms and values in dollars at the average exchange rate of 6.2 crowns to the dollar:

Article—	Quantity.	Value.
Cod roe, bbls. ....	30	\$808
Stewed crab in tins, kilos .....	3,799	2,581
Herring, salted, bbls. ....	4,925	54,193
Mackerel, salted, bbls. ....	3,676	99,891
Sardines in tins, kilos ....	161,025	85,673
Stock fish (dr. cod), kilos .....	575,729	226,357
Codliver oil, bbls. ....	4,757	276,320
Fish fertilizer, tons .....	100	10,891



# California Canned Food Overproduced

## Many Small Canneries May be Eliminated This Year

Isidor Jacobs, president California Canneries Company of San Francisco, in an interview in the Pacific Rural Press, [tells of the overproduction of California canned fruits and the inability of the trade to dispose of the 1920 surplus. He believes that many small canneries will be eliminated in the future, and that it will be a survival of the fittest, which means that the larger plants with well-known brands will continue to operate. He says in part:

"The present situation in connection with California canned fruits, as well as California canned tomatoes, is not only abnormal, but pessimistic. This does not mean that there will not be a successful future for the industry, but it will rather go to those canners who have established brands. The situation confronting the California industry has been brought about by a series of fortuitous circumstances. In the first place, the different departments of the war bureaus encouraged the extension of the industry so that at present there are fruit and tomato canneries enough in California to supply three times the normal trade that was supplied in the pre-war period. In addition to this, during the war, easy money resulted in overconfidence; and extensions in the industry went on in all directions without any regard to the normal demand that might exist after the war ended. It therefore became apparent that unless the normal demand, as it existed prior to the war, increased tremendously, it was bound to bring about the present situation.

"A year ago I predicted that at least one-fourth of the canneries in California would be put out of business within a year, and I believe my prediction has been verified; because at least one-third of the canneries in California will be unable to pack anything during 1921, and the losses to California canneries without established reputations for their brands and those who carried over enormous stocks will be tremendous.

"These carry-over goods are on a basis of over \$110 per ton for apricots and in many instances for cling peaches. A legitimate price during 1920 for these fruits would have been about \$40 per ton. Then again the carry-over cost of sugar in these goods at 25 cents per pound, as compared with the coming season's price of about 7 cents, will also mean tremendous losses.

"Undoubtedly those canners who have established trade for their brands and trademarks will weather the storm and eventually see daylight ahead, but the enormous number of new canneries that started without this demand for established brands will have very hard sailing in the future, if they can manufacture at all, and if they are able to weather the financial catastrophe that has struck them with the enormous carry-over."

The production of pimento in Jamaica increased from 6,384,000 lbs. in 1918 to 13,104,000 lbs. in 1919. Experiments are now being conducted for the extraction of oil from pimento leaves, from which oil vanillin may be obtained.

## California Canneries May Ship to East by Water

High railroad freight rates have caused the California canneries to turn their attention to the possibilities of shipping their products by water. The canning interests of the State have estimated that at the present time there is in California, installed, canning equipment sufficient to produce \$6,000,000 cases of canned foods yearly and the crops are large enough to justify the equipment. The canning industry can turn out 650,000 tons of food yearly. Dried fruit and vegetables can be produced to an equal amount.

In the two lines mentioned there are available for transportation at least 1,200,000 tons yearly. At \$1.00 per 100 pounds the freight bill on canned foods alone would amount to \$13,000,000 yearly. By 1926 it would amount to \$20,000,000. Allowing at the present time a profit of 10 per cent, the carriers would enjoy a net income of \$1,300,000 a year for carrying this canned food. This gain would amply justify them in maintaining carrying equipment to the value of \$26,000,000. An equal sum could be invested for the transportation of dried fruits and vegetables. Therefore, a sum of \$50,000,000 for transportation equipment for the canning industry of California is fully justified, it is stated. Invested in steamers the canners believe this amount of money would provide a great fleet. In five years the amount so invested would be increased to \$75,000,000 and the increase of fleet would correspond.

## Recent Patents

The following patents of interest to readers of The American Food Journal recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Continental Trust Building, Washington, D. C., at the rate of 20c each. State number of the patent and name of inventor when ordering.

1,365,676. Dough-room machine. William F. L. Fisch, Birmingham, Ala.

1,365,909. Preparation of food and food products. Julian G. Goodhue and Herbert L. Trube, Chicago; said Trube assignor to said Goodhue.

1,365,910. Preparation of food and food products. Julian G. Goodhue and Herbert L. Trube, Chicago; said Trube assignor to said Goodhue.

1,365,928. Process for cooking foods. John F. & Winfield A. Logan, St. Catharines, Ont.

1,366,183. Sausage-linking machine. Charles W. Hottmann, Philadelphia.

1,366,188. Coring means for tomato-peeling machines. Charles Kirino, Ogden, Utah.

1,366,266. Dough-molding machine. Frank X. Lauterbur, Sidney, Ohio.

1,366,338. Process of extracting oil from cocoanuts. Wallace Alexander, Jersey City, N. J., assignor to DeLaval Separator Co., New York.

1,366,339. Process for the separation

of food products from fresh cocoanuts. Wallace Alexander, Jersey City, N. J., assignor to DeLaval Separator Company, New York.

1,366,495. Manufacture of solid, soluble beverage extract. Oge Roewade, Battle Creek, Mich., assignor to Postum Cereal Company, Wilmington, Del.

1,366,822. Manufacture of milk-sugar. Russell W. Mumford, New York, N. Y., assignor to Refining Products Corporation, Wilmington, Del.

1,366,961. Food product. Lorraine J. Schumaker, Philadelphia, assignor to American Pretzel Co., same place.

1,367,024. Freezing of fish and other articles of food. Nekolai Dahl, Trondhjem, Norway.

1,367,077. Electric fruit-marking machine. Lewis Neuenschwander, Los Angeles, Cal.

1,367,530. Process of bleaching and maturing flour and other cereal products. John C. Baker, Ridgefield Park, N. J.

1,367,546. Machine for deheading shrimps. Louis G. Hirth and August Matton, Fernandina, Fla.; said Matton assignor to said Hirth.

1,367,664. Nut-bleaching machine. James G. Kennedy, Chicago, Ill.

1,367,715. Method of making water-soluble coffee extract and the product. David S. Pratt and Charles W. Trigg, Pittsburgh, Pa., assignors to John E. King, Detroit, Mich.

1,367,716. Method of adding segregated aromas to coffee extract. David S. Pratt and Charles W. Trigg, Pittsburgh, Pa., assignors to John E. King, Detroit, Mich.

1,367,724. Process for recovery of aromatic and flavoring constituents. Charles W. Trigg, Pittsburgh, Pa., assignor to John E. King, Detroit, Mich.

1,367,725. Process for recovery of escaping aromas of food, etc. Charles W. Trigg, Pittsburgh, Pa., assignor to John E. King, Detroit, Mich.

1,367,726. Recovery of aromas, etc., escaping during comminution of coffee beans. Charles W. Trigg, Pittsburgh, Pa., assignor to John E. King, Detroit, Mich.

1,368,015. Baking-oven. Warwick H. Beanes, Peterborough, England.

## "Sunmaid" Advertising Campaign

The California Associated Raisin Company, Fresno, Cal., in announcing a newspaper campaign for "Sunmaid" raisins, says it has launched the largest newspaper campaign ever attempted on any food product."

"About \$500,000 will be spent on "Sunmaid" raisins in intensive newspaper publicity that will be national in scope, yet local in force. This campaign is in addition to the million-dollar national magazine campaign and poster showings in every town where newspapers carry our copy.

"Our prime object is to help remove the element of speculation from the dried-fruit industry as far as raisins are concerned. We want 'Sunmaid' raisins to move more than ever before as a staple specialty through wholesale and retail channels to the consumer.

"Furthermore, we want the 'Sunmaid' brand to be an assurance of quality to wholesaler, retailer and consumer that will mean protection against the influx of foreign fruit of unknown quality, invited by our present tariff status."



## Production of Fats and Oils For 1919-'20

### Bureau of Census Announces Official Figures---Work Begun in 1918 by Food Administration

Reliable statistics of the production, consumption, and stocks of animal and vegetable fats and oils were found to be of such prime importance during the war that the work of compiling them was undertaken by a division of the United States Food Administration. The activities of that organization as regards these statistics ceased with the collection of data covering the month of December, 1918. The Census Bureau was authorized in May, 1919, to continue this service, with some modifications, during the critical period of reconstruction, and quarterly reports have been compiled and published for each quarter in 1919 and 1920.

The scope of the survey as conducted by the Food Administration embraced all the corporations, firms, and individuals licensed by it to handle these commodities, and all such licensees were required to make monthly reports. The scope of the inquiry by the Census Bureau covers factory production and factory consumption for three-month periods, and factory and warehouse stocks at the end of each period. The list of establishments canvassed to secure the data for the first quarter of 1919 included not only those listed by the Food Administration but in addition a considerable number obtained from miscellaneous sources. As the work progressed it was discovered that the operations of some of those canvassed were not applicable to the purposes of the inquiry and they were accordingly dropped from the list. On the other hand additional names were added from time to time and important data were obtained for some of the later quarterly summaries, whereas corresponding data had not been received and, therefore, had not been included in the earlier summaries. Furthermore, as the reports from the several establishments accumulated making comparisons possible, and as the nature of the operations of the individual plants became more clearly defined, deficiencies and inconsistencies in some of the reports were easily discernable, which in the first stages of the work were not questioned. Because of these conditions the individual reports for all quarters of the year 1919 have been examined and corrections made and missing data supplied by correspondence to the end that the revised figures in this publication are practically complete and reliable for the purposes they are meant to serve.

#### Explanation of Figures

The Bureau of Census gives the following additional explanation of its figures:

"The number of commodities about which inquiry is to be made must have limitation in any practical scheme of canvass and compilation within a stated period. It was thought therefore that the factory production of the crude products, their consumption in refining and other manufacturing processes, the production of certain specified refined oils and of the derivatives

or secondary products obtained in all these processes, together with stocks of all kinds on specified dates would be sufficient information to enable all interested persons to arrive at a practical judgment of the fats and oils situation in general. Accordingly the many compounds, mixtures, and substitutes turned out by the factories were not included, as such, in the schedule of inquiry.

"In interpreting the statistics in this report their limitations as indicated by the scope of the inquiry should be borne in mind. For many of the commodities practically the entire production of the factory production represents the country. This is especially the case as regards the crude and refined vegetable oils and of the derivatives, or secondary products, of both animal and vegetable fats and oils. However, it is evident that the factory production of the primary animal fats and greases does not account for the considerable quantities produced on the farms, in the homes, and in the smaller local butcher shops and meat markets. Neither does the factory consumption of animal and vegetable fats and oils constitute the total consumption in many instances. Large quantities find their way to consumption in the trades and in the homes of the people through the channels of the wholesale and retail businesses. In like manner the figures for stocks, limited as they are to the holdings in manufacturing plants, and in warehouses, do not include the large quantities held by the smaller dealers. Particularly affected by these conditions are the consumption and stocks of refined cottonseed, peanut, and olive oils which are used so largely in the homes for culinary purposes; of soya bean, linseed, and menhaden oils used to such large extent by painters; and notably of lard, so much of the factory production of which finds its way through the channels of trade to household consumption.

"As previously stated, compounds and substitutes are not reported as such in the figures of production, consumption and stocks. However, the item of "hydrogenated fats and oils" embraces some of the lard and butter substitutes which appear on the market under various trade names; also, the item of "vegetable stearin," which some manufacturers confound with hydrogenated oils because they happen to be of similar appearance and consistency and are capable of being put, to some extent, to similar uses. Vegetable stearin is produced from vegetable oils by chilling processes which separate the olein or liquid portions from the stearin or solid portions. This process may be entire, making practically a complete separation, or it may be partial removing from the oil only a portion of the stearin as is done in the preparation of winter oils. On the other hand in the hydrogenation process, in which reduced nickel is used to effect the combination of hydrogen gas with the liquid glycerids of the oils, the entire bulk of the oil is hard-

ened or reduced to the consistency of a soft or a stiff fat according to the degree of hydrogenation, and none of its constituent elements is removed. It is highly probable, therefore, that the figures for vegetable stearin given include considerable quantities of hydrogenated oils and in drawing deductions in this connection both items should be considered together. It is probable, however, that the aggregate of both these items does not cover all the lard substitutes and nut butters produced. A confusion of terms has probably affected the reports on lard also, and the figures for neutral lard doubtless include some ordinary edible lard.

#### Operations Not Uniformly Reported

"Attention is called to the fact that establishments engaged in the same kind of operations have not been uniform in their methods of reporting those operations. For example, establishments engaged in the refining of vegetable oils theoretically should report the amount of crude oil consumed in the refining process, the amount of refined oil produced, and the amount of foots resulting from the operation together with the amounts of either consumed in further process and the resultant product or products. Some of the establishments did so report; others, apparently neglected to give, or were not in position to give, accurate information as to the intermediate steps in a practically continuous process and, for instance, instead of reporting any crude foots at all, reported the final product as distilled foots, or acidulated soap stock, or fatty acids. Some of the producers of oleo oil and oleo stearin did not report as either produced, consumed, or on hand the oleo stock, or even include it under the heading of edible tallow as others apparently did. Figures for oleo stock, therefore, did not represent the totals for production or consumption as was evident from the figures for production of oleo oil and oleo stearin. Oleo stock was accordingly dropped from the schedule of inquiry. The same condition affects to a less extent the data for the several kinds of glycerin. It should be stated, however, that the reports of individual establishments have been uniform in nature as to their operations during the two years shown in the following tables, and the statistics are, therefore, comparable.

Following are the figures for 1919 and 1920 by years; the figures for three-month periods may be obtained from the Bureau of Census.

#### Production of Animal and Vegetable Oils and Fats

Vegetable Oils		Pounds
Cottonseed, crude, 1920	.....	1,141,389,742
Cottonseed, crude, 1919	.....	1,430,002,962
Cottonseed, refined, 1920	.....	978,252,215
Cottonseed, refined, 1919	.....	1,180,285,341
Peanut, crude and virgin, 1920	.....	13,085,262
Peanut, crude and virgin, 1919	.....	87,606,844
Peanut, refined, 1920	.....	73,459,511
Peanut, refined, 1919	.....	184,603,537
Coconut or copra, crude, 1920	.....	131,218,408
Coconut or copra, crude, 1919	.....	215,542,157
Coconut or copra, refined, 1920	.....	185,943,673
Coconut or copra, refined, 1919	.....	277,092,711
Corn, crude, 1920	.....	98,618,940
Corn, crude, 1919	.....	97,399,873
Corn, refined, 1920	.....	76,009,846
Corn, refined, 1919	.....	76,047,692
Soya-bean, crude, 1920	.....	
Soya bean, crude, 1919	.....	
Soya-bean, refined, 1920	.....	64,624,876
Soya-bean, refined 1919	.....	149,048,162
Olive, crude and virgin, 1920	.....	643,116
Olive, crude and virgin, 1919	.....	438,694



Olive, refined, 1920 .....	8,300
Olive, refined, 1919 .....	101,796
Palm-kernel, crude, 1920 .....	2,671,112
Palm-kernel, crude, 1919 .....	2,517,105
Palm-kernel, refined, 1920 .....	
Palm-kernel, refined, 1919 .....	
Rapeseed, 1920 .....	408,840
Rapeseed, 1919 .....	1,236,743
Linseed, 1920, .....	485,271,517
Linseed, 1919 .....	452,927,798
Chinese wood or tung, 1920 ....	
Chinese wood or tung, 1919 ....	
Castor, 1920 .....	24,187,085
Castor, 1919 .....	24,637,203
Palm, 1920 .....	
Palm, 1919 .....	
Chinese vegetable tallow, 1920.	
Chinese vegetable tallow, 1919.	
All other vegetable oils, 1920...	1,610,272
All other vegetable oils, 1919...	2,683,417

**Fish Oils**

Cod and cod liver, 1920 .....	1,470,812
Cod and cod liver, 1919 .....	968,339
Menhaden, 1920 .....	27,573,401
Menhaden, 1919 .....	12,827,541
Whale, 1920 .....	23,051,811
Whale, 1919 .....	8,712,308
Herring, 1920 .....	2,852,840
Herring, 1919 .....	1,431,230
Sperm, 1920 .....	3,125,525
Sperm, 1919 .....	649,701
All other (including marine ani- mals), 1920 .....	7,952,464
All other (including marine ani- mals), 1919 .....	8,332,412

**Animal Fats**

Lard, neutral, 1920 .....	77,690,234
Lard, neutral, 1919 .....	90,031,605
Lard, other edible, 1920 .....	1,257,458,481
Lard, other edible, 1919 .....	1,084,035,935
Tallow, edible, 1920 .....	37,353,300
Tallow, edible, 1919 .....	36,506,019
Tallow, inedible, 1920 .....	263,989,589
Tallow, inedible, 1919 .....	251,854,318
Neat's-foot oil, 1920 .....	6,212,118
Neat's-foot oil, 1919 .....	7,645,514

**Greases**

White, 1920 .....	61,229,115
White, 1919 .....	60,393,865
Yellow, 1920 .....	41,366,445
Yellow, 1919 .....	42,392,078
Brown, 1920 .....	31,860,359
Brown, 1919 .....	27,015,802
Bone, 1920 .....	29,748,746
Bone, 1919 .....	22,523,523
Tankage, 1920 .....	99,778,537
Tankage, 1919 .....	45,310,794
Garbage, or house, 1920 .....	53,140,500
Garbage, or house, 1919 .....	50,822,650
Wool, 1920 .....	6,985,212
Wool, 1919 .....	7,903,043
Recovered, or degreas, 1920 ....	12,870,595
Recovered, or degreas, 1919.....	12,532,034
All other, 1920 .....	8,554,833
All other, 1919 .....	9,695,774

**Derivatives**

Acidulated soap stock, 1920 ...	85,068,791
Acidulated soap stock, 1919 ...	56,322,513
Cottonseed foots, 1920 .....	184,986,704
Cottonseed foots, 1919 .....	167,047,272
Cottonseed foots, distilled, 1920	17,290,016
Cottonseed foots, distilled, 1919	29,664,282
Other vegetable foots, 1920 ....	44,353,969
Other vegetable foots, 1919 ....	68,990,785
Other vegetable foots, distilled, 1920 .....	2,844,127
Fatty acids, 1920 .....	45,877,999
Fatty acids, 1919 .....	43,338,745
Fatty acids, distilled, 1920.....	89,515,915
Fatty acids, distilled, 1919 ....	73,424,800
Glycerin, crude, 80 per cent. basis, 1920 .....	54,688,295
Glycerin, crude, 80 per cent. basis, 1919 .....	61,792,958
Glycerin, dynamite, 1920 .....	31,571,047
Glycerin, dynamite, 1919 .....	25,665,394
Glycerin, chemically pure, 1920.	32,859,844
Glycerin, chemically pure, 1919.	36,692,530
Hydrogenated oils, 1920 .....	180,536,870
Hydrogenated oils, 1919 .....	120,444,589
Lard oil, 1920 .....	22,240,907
Lard oil, 1919 .....	18,331,623
Oleo oil, edible, 1920 .....	132,111,662
Oleo oil, edible, 1919 .....	129,863,250
Red oil, 1920 .....	43,035,871
Red oil, 1919 .....	42,744,916
Stearic acid, 1920 .....	24,372,395
Stearic acid, 1919 .....	22,920,184
Animal stearin, edible, 1920....	68,955,235
Animal stearin, edible, 1919....	68,086,582
Animal stearin, inedible, 1920...	18,451,267
Animal stearin, inedible, 1919...	20,538,453
Tallow oil, 1920 .....	14,597,874
Tallow oil, 1919 .....	11,889,220
Vegetable stearin, 1920 .....	20,438,809
Vegetable stearin, 1919 .....	29,295,285
Miscellaneous soap stock, 1920.	24,114,776
Miscellaneous soap stock, 1919.	31,917,317

**CONSUMPTION OF ANIMAL AND VEGETABLE OILS AND FATS****Vegetable Oils**

Cottonseed, crude, 1920 .....	1,133,399,749
Cottonseed, crude, 1919 .....	1,316,151,550
Cottonseed, refined, 1920 .....	680,190,966
Cottonseed, refined, 1919 .....	900,607,773
Peanut, crude and virgin, 1920 ..	85,067,507

Peanut, crude and virgin, 1919.	212,353,312
Peanut, refined, 1920 .....	79,291,163
Peanut, refined, 1919 .....	190,176,290
Coconut or copra, crude, 1920...	294,098,972
Coconut or copra, crude, 1919...	422,257,005
Coconut or copra, refined, 1920.	236,102,679
Coconut or copra, refined, 1919.	212,216,696
Corn, crude, 1920 .....	89,633,917
Corn, crude, 1919 .....	90,767,427
Corn, refined, 1920 .....	20,883,297
Corn, refined, 1919 .....	18,591,820
Soya-bean, crude, 1920 .....	120,084,529
Soya-bean, crude, 1919 .....	224,635,361
Soya-bean, refined, 1920 .....	36,524,574
Soya-bean, refined, 1919 .....	106,780,776
Olive, crude and virgin, 1920...	2,001,435
Olive, crude and virgin, 1919 ...	1,498,884
Olive, refined, 1920 .....	1,120,928
Olive, refined, 1919 .....	1,011,841
Palm-kernel, crude, 1920 .....	1,334,017
Palm-kernel, crude, 1919 .....	1,764,671
Palm-kernel, refined, 1920 .....	335,651
Palm-kernel, refined, 1919 .....	244,038
Rapeseed, 1920 .....	11,127,280
Rapeseed, 1919 .....	10,110,674
Linseed, 1920 .....	214,203,046
Linseed, 1919 .....	189,145,649
Chinese wood or tung, 1920.....	46,381,235
Chinese wood or tung, 1919....	34,166,655
Castor, 1920 .....	6,527,908
Castor, 1919 .....	5,642,505
Palm, 1920 .....	24,791,212
Palm, 1919 .....	18,450,532
Chinese vegetable tallow, 1920...	3,157,215
Chinese vegetable tallow, 1919...	3,654,682
All other vegetable oils, 1920...	12,674,239
All other vegetable oils, 1919...	12,611,587

**Fish Oils**

Cod and cod liver, 1920 .....	3,683,011
Cod and cod liver, 1919 .....	4,624,070
Menhaden, 1920 .....	18,420,790
Menhaden, 1919 .....	16,357,473
Whale, 1920 .....	17,826,827
Whale, 1919 .....	9,606,631
Herring, 1920 .....	3,335,647
Herring, 1919 .....	2,732,954
Sperm, 1920 .....	1,859,855
Sperm, 1919 .....	1,527,879
All other (including marine ani- mals), 1920 .....	3,059,850
All other (including marine ani- mals), 1919 .....	4,313,830

**Animal Fats**

Lard, neutral, 1920 .....	44,590,390
Lard, neutral, 1919 .....	70,714,145
Lard, other edible, 1920 .....	223,376,745
Lard, other edible, 1919 .....	218,998,530
Tallow, edible, 1920 .....	17,049,020
Tallow, edible, 1919 .....	22,598,613
Tallow, inedible, 1920 .....	310,818,343
Tallow, inedible, 1919 .....	262,341,486
Neat's-foot oil, 1920 .....	1,268,490
Neat's-foot oil, 1919 .....	2,579,654

**Greases**

White, 1920 .....	46,769,399
White, 1919 .....	51,981,416
Yellow, 1920 .....	42,274,025
Yellow, 1919 .....	35,912,771
Brown, 1920 .....	40,436,152
Brown, 1919 .....	39,316,615
Bone, 1920 .....	5,982,975
Bone, 1919 .....	9,672,845
Tankage, 1920 .....	7,951,781
Tankage, 1919 .....	7,436,325
Garbage, or house, 1920 .....	38,298,524
Garbage, or house, 1919 .....	47,563,784
Wool, 1920 .....	1,955,278
Wool, 1919 .....	1,592,023
Recovered, or degreas, 1920....	7,489,019
Recovered, or degreas, 1919.....	8,067,567
All other, 1920 .....	9,933,410
All other, 1919 .....	4,718,252

**Derivatives**

Acidulated soap stock, 1920....	74,903,951
Acidulated soap stock, 1919....	47,512,529
Cottonseed foots, 1920 .....	163,816,548
Cottonseed foots, 1919 .....	171,078,556
Cottonseed foots, distilled, 1920.	23,365,565
Cottonseed foots, distilled, 1919.	27,673,913
Other vegetable foots, 1920 ....	33,465,629
Other vegetable foots, 1919 ....	43,286,964
Other vegetable foots, distilled, 1920 .....	224,557
Fatty acids, 1920 .....	52,666,784
Fatty acids, 1919 .....	50,509,190
Fatty acids, distilled, 1920 ....	67,677,423
Fatty acids, distilled, 1919 ....	49,361,875
Glycerin, crude, 80 per cent basis, 1920 .....	62,515,030
Glycerin, crude, 80 per cent basis, 1919 .....	58,974,041
Glycerin, dynamite, 1920 .....	37,720,333
Glycerin, dynamite, 1919 .....	28,961,873
Glycerin, chemically pure, 1920	1,745,538
Glycerin, chemically pure, 1919.	2,714,350
Hydrogenated oils, 1920 .....	35,119,614
Hydrogenated oils, 1919 .....	53,591,181
Lard oil, 1920 .....	9,653,759
Lard oil, 1919 .....	10,250,962
Oleo oil, edible, 1920 .....	65,732,832
Oleo oil, edible, 1919 .....	72,935,413
Red oil, 1920 .....	17,533,530
Red oil, 1919 .....	21,896,062
Stearic acid, 1920 .....	6,319,353
Stearic acid, 1919 .....	5,567,634
Animal stearin, edible, 1920....	48,901,313
Animal stearin, edible, 1919....	47,253,920

Animal stearin, inedible, 1920...	18,539,481
Animal stearin, inedible, 1919...	28,060,502
Tallow oil, 1920 .....	39,815,401
Tallow oil, 1919 .....	49,984,263
Vegetable stearin, 1920 .....	19,452,817
Vegetable stearin, 1919 .....	32,586,358
Miscellaneous soap stock, 1920.	36,018,552
Miscellaneous soap stock, 1919.	33,953,892

**RAW MATERIALS USED IN PRODUCING VEGETABLE OILS IN 1919 AND 1920**

	Consumed tons
Cotton seed, 1920 .....	3,692,449
Cotton seed, 1919 .....	4,011,667
Peanuts, hulled, 1920 .....	11,919
Peanuts, hulled, 1919 .....	141,704
Peanut in hull, 1919 .....	11,254
Peanuts in hull, 1919 .....	3,318
Copra, 1920 .....	101,104
Copra, 1919 .....	168,612
Coconuts and skins, 1920 .....	1,893
Coconuts and skins, 1919 .....	2,521
Corn germs, 1920 .....	145,578
Corn germs, 1919 .....	146,579
Olives, 1920 .....	2,131
Olives, 1919 .....	1,712
Flaxseed, 1920 .....	717,528
Flaxseed, 1919 .....	691,737
Castor beans, 1920 .....	28,011
Castor beans, 1919 .....	26,489
Palm kernels, 1920 .....	2,934
Palm kernels, 1919 .....	2,862
Rapeseed, 1920 .....	1,238
Rapeseed, 1919 .....	3,391
Mustardseed, 1920 .....	3,143
Mustardseed, 1919 .....	3,503
Miscellaneous, 1920 .....	966
Miscellaneous, 1919 .....	967

**IMPORTS AND RE-EXPORTS OF FOREIGN VEGETABLE OILS AND FATS IN 1919-20**

	Ex. lbs.	Im. lbs.
Chinese nut, 1920....	68,668,150	2,883,367
Chinese nut, 1919....	53,852,595	2,493,285
Coconut, 1920.....	215,238,516	2,965,209
Coconut, 1919.....	281,063,213	7,954,528
Cotton seed, 1920...	9,457,924	33,995
Cotton seed, 1919....	27,805,784	210,759
Linseed or flaxseed, 1920 .....	35,200,199	1,453
Linseed or flaxseed, 1919 .....	16,142,835	53,212
Olive, inedible, 1920.	496,118	36,510
Olive, inedible, 1919.	2,118,405	
Olive, edible, 1920...	30,591,061	452,069
Olive, edible, 1919...	67,681,020	485,078
Palm, 1920 .....	41,948,224	136,045
Palm, 1919 .....	41,817,945	254,102
Palm kernel, 1920 ...	1,693,740	2,010
Palm kernel, 1919 ...	1,929,493	5,000
Peanut, 1920 .....	95,124,277	29,295
Peanut, 1919 .....	154,052,378	92,325
Rapeseed, 1920 .....	12,912,667	
Rapeseed, 1919 .....	8,375,295	840
Soya bean, 1920.....	112,213,750	3,228,353
Soya bean, 1919 ....	195,808,421	17,833,423
Sulphur oil, or olive foots, 1920 .....	8,664,517	24,736
Sulphur oil, or olive foots, 1919 .....	6,541,271	155,702
All other vegetable (value) 1920 .....	\$635,700	\$97,876
All other vegetable (value) 1919 .....	\$2,558,259	\$57,211

**EXPORTS OF DOMESTIC ANIMAL AND VEGETABLE FATS AND OILS IN 1919-20**

	Vegetable Oils
Coconut oil, 1920 .....	25,694,345
Coconut oil, 1919 .....	118,611,743
Corn oil, 1920 .....	12,059,479
Corn oil, 1919 .....	6,414,901
Cottonseed oil, 1920 .....	184,753,824
Cottonseed oil, 1919 .....	193,133,201
Linseed or flaxseed oil, 1920...	5,365,875
Linseed or flaxseed oil, 1919...	11,266,335
Peanut oil, 1920 .....	1,425,225
Peanut oil, 1919 .....	4,341,803
Soya bean oil, 1920 .....	43,511,862
Soya bean oil, 1919 .....	27,714,764
All other vegetable oils (value), 1920 .....	\$1,884,435
All other vegetable oils (value), 1919 .....	\$18,507,128
	Animal Fats and Oils
Fish oil, 1920 .....	3,212,189
Fish oil, 1919 .....	8,141,632
Lard, 1920 .....	612,249,951
Lard, 1919 .....	760,901,611
Neutral lard, 1920 .....	23,238,071
Neutral lard, 1919 .....	22,957,137
Tallow, 1920 .....	20,691,638
Tallow, 1919 .....	38,953,783
All other animal oils, 1920 ....	4,045,267
All other animal oils, 1919 ....	14,621,940

**Derivatives**

Glycerin, 1920 .....	1,742,708
Glycerin, 1919 .....	3,963,392
Lard oil, 1920 .....	666,892
Lard oil, 1919 .....	1,086,914
Oleo oil, 1920 .....	74,368,344
Oleo oil, 1919 .....	75,585,164
Stearin from animal fats, 1920 .....	17,512,978
Stearin from animal fats, 1919 .....	20,854,724
Vegetable stearin, 1920 .....	1,810,518
Vegetable stearin, 1919 .....	4,158,736
Soap stock and other grease (value), 1920 .....	\$6,697,811
Soap stock and other grease (value), 1919 .....	\$6,656,035



## The Supreme Court Says So:

*"—a single thing coming from a single source."*

The United States Supreme Court, in a decision in the case of The Coca-Cola Company vs. The Koke Company of America, et al., handed down December 6, 1920, completely and finally established the right of The Coca-Cola Company to full protection against any kind and character of infringement on its trade-mark or imitation of its product.

The decision specifically defines Coca-Cola in these words:

*"It means a single thing coming from a single source, and well known to the community."*

The Koke Company of America and its allied interests petitioned for a rehearing. On January 17, 1921, the Supreme Court closed the case forever by denying the petition.

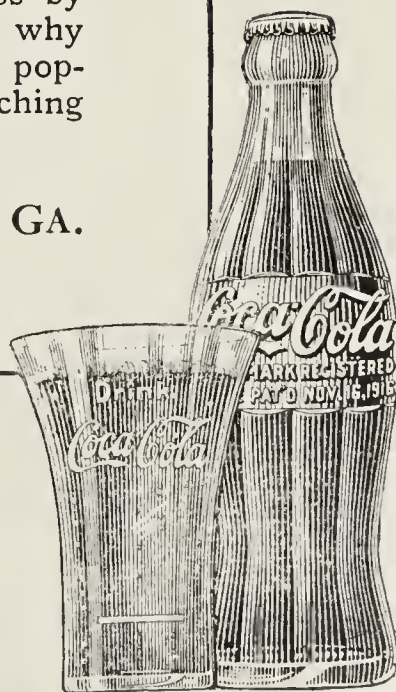
Thus the highest tribunal in the land brands as a swindle any effort of an imitator to make money through Coca-Cola's good will.

It pronounces the last word in the law to support dealers in fighting the unfair competition of deceptions with inferior products.

It makes imperative the policy of The Coca-Cola Company that only Coca-Cola shall be served when Coca-Cola is asked for.

It means Coca-Cola is distinct and in a class by itself, the real thing—which is the reason why Coca-Cola always and everywhere is the most popular of beverages in pleasing taste and quenching thirst.

THE COCA-COLA COMPANY, ATLANTA, GA.





## Meat Packing Companies Reduce Wages

Wage decreases of approximately 12 1-2 per cent., affecting more than 100,000 employes of the packing industry in all parts of the country, were officially announced on March 8. The reductions are effective on March 14.

At the same time there will be a revision of working hours, time and one-half for overtime being paid only after ten hours' labor in any one day or after fifty-four hours in any one week. Double time will be paid for Sundays and holidays.

The new wages scale reduces the wage rate of all hourly paid employes eight cents per hour. The piece work rates are reduced 12 1-2 per cent. At present the lowest rate paid labor is fifty-three cents an hour. Under the new scale this will be cut to forty-five cents. The higher paid employes will be reduced proportionately. The minimum wage guarantee for forty hours' pay per week will be continued.

The orders for the reduction in wages follows the cancellation by the packers on February 26 of the wartime arbitration agreements for the settlement of all disputes with their employes.

J. Ogden Armour, president of Armour & Co., in a statement, said:

"The revision in hours and wages is designed to make it possible for the industry to continue to serve livestock producers and meat consumers. The employers' desires under the circumstances are not at issue; the fact is simply that the business cannot exist if its expenses are greater than its margins.

"The reduction of 12 1-2 per cent. is very small in view of the fact that packing house wages average three times as much today as they were before the war. The main objective in revising is to assure work in return for the wages which are paid, thereby obviating the penalty incurred through the payment of large sums for which no work is performed.

"Despite the lower rate which will obtain, employes can probably earn as much or more than under existing conditions."

## Production of Blackstrap Molasses in Cuba

The principal dealers in Cuban blackstrap molasses state that a fair average analysis of this product will show 10 to 17 per cent water, 36 per cent Clerget sugars, 16 per cent glucose, and the remainder fiber, gums, and salts, these last named being by-products which are not now utilized.

It is claimed that under an efficient process the average gallon of blackstrap molasses will distil from 0.3 to 0.5 gallon proof alcohol. It would therefore appear that few products are better adapted to the manufacture of alcohol.

Producers and dealers in Cuba express the opinion, according to the U. S. consul in Havana, that the demand for blackstrap molasses will steadily increase, especially if alcohol comes into general use as a substitute for gasoline in running motors. Moreover, it is believed that the growing

demand for the use of raw molasses in the manufacture of certain stock foods will offset the loss of the market occasioned by the prohibition of the manufacture of alcoholic beverages in the United States.

Due to the high price of sugar as compared with that of molasses, this latter product is often burned by the sugar mills as fuel in connection with other refuse, instead of being stored by them until shipment can be made.

A proper interest in the storage and conservation of blackstrap molasses by the sugar mills depends largely on the offering of a fair market price; and if excessive profits are gained by any of the parties handling the product, the margin will become too narrow to be profitable to the others.

A more careful conservation would also create a demand for steel storage tanks both at the sugar mills and various points of shipment. It is stated that the port of Matanzas has storage capacity for over 16,000,000 gallons; Habana, 8,000,000; Cienfuegos, 6,000,000; Santiago de Cuba, Monaco, Jucaro, Antilla, Neuvas, and Puerto Padre 2,000,000 to 3,000,000 gallons each; Boqueron, Caibarien, and Sagua under 2,000,000 gallons each. Important improvements are under way at Matanzas and it is believed additional storage will soon be available at that point. Shippers of molasses claim a total of approximately 765 tank cars of 5,000 gallons each, and the United Railways have available some 40 tank cars of less capacity.

Figures given by the Cuban Government show the production of molasses in 1917, 1918 and 1919 as follows: 1917, 199,193,722 gals.; 1918, 163,716,219 gals.; 1919, 49,782,231 gals. (first six months only; figures for latter half of year being unavailable.) It is estimated that the 1920 production totalled 180,000,000 gals., of which quantity probably 20,000,000 to 30,000,000 gals. was used in Cuba for the manufacture of fuel alcohol. United States takes the bulk of the Cuban product.

## Cudahy Sales Nearly Three Hundred Million Dollars

E. A. Cudahy, president of the Cudahy Packing Co., in an annual statement to the shareholders of that company, said: "Prices of packing-house products have reached a level where any further serious decline would seem to be out of the question."

The total sales of the company for the year ending October 30, 1920, were \$288,802,000, as against \$305,997,000 for the year ending November 1, 1919. The surplus for the 1920 year was \$5,382,566.56. The net profit for the year, according to President Cudahy, was \$624,288.06.

## Canning Company Now Sells Direct

The Booth Packing Company, Baltimore, has announced that in the future it will go direct to the final consumer with all its products, consisting of fruits, vegetables, catsup, oysters, peanut butter, jams and jellies. The broker, wholesale grocer and retailer will be eliminated. Orders will be filled by mail and letters and price-lists to consumers have already been issued.

## Farewell Luncheon For Secretary Meredith

E. T. Meredith, former Secretary of Agriculture, was tendered a farewell reception and buffet luncheon in the Hotel Raleigh ballroom, Washington, D. C., by 600 of the scientific and technical men connected with the Department of Agriculture. The affair, which was unofficial in character, was given as a testimonial to the work of Secretary Meredith in bringing the value and needs of the various scientific projects of the department before the public in a way to enlist co-operation of business men and officials. The department has 2240 scientific workers, more than all the other Government departments together, and the attendance at the reception was limited only by the capacity of the ballroom.

Dr. B. T. Galloway, of the Office of Foreign Seed and Plant Introduction, presented to Secretary Meredith a handsomely bound book, containing a testimonial signed by more than 500 scientists. The speech of presentation and Secretary Meredith's response were the only addresses.

As Secretary Meredith entered the room, the orchestra struck up the "Blaze of Glory" march. The reception followed, the receiving line including Dr. E. D. Ball, Assistant Secretary; bureau chief, and members of the committee on arrangements. At the luncheon, which followed the reception, the menu consisted partly of products which have been developed or introduced by the department. Two of these were articles which have been patented by department scientists for public use. These were the new "perfect bread," the result of studies by Dr. Carl O. Johns, formerly of the department, and A. J. Fink, being the first food product furnishing a completely balanced ration; and candies from the new sweet-potato sirup, the formula for which was patented by Dr. H. C. Gore. Other department contributions to the menu were American Roquefort cheese; Saratoga chips, made from the new vegetable, dasheen; a new soy-bean sauce, developed by Dr. M. B. Church, and several new varieties of grapes, imported under direction of Dr. George C. Husmann.

## McCormick & Company Occupy New Baltimore Home

McCormick & Company, Baltimore, Md., manufacturers and jobbers of food products, spices and drugs, have occupied their new factory and warehouse at Light, Barre and Charles streets, that city. The total floor space of the new plant is 12 acres. The business was established 31 years ago by Willoughby M. McCormick in modest rented quarters and today does a business that requires 20,000,000 cans and cartons a year. More than 800 products are handled.

John F. Dawson has become advertising manager of the National Oats Co. and the Corno Mills Co., St. Louis, Mo. Ray C. Flint, former advertising manager, is now sales manager for an insurance organization in St. Louis. Mr. Dawson was formerly in the purchasing and accounting department of his company.





**Amy Smith says:**

"I find Moxley's Margarine gives excellent results in cooking, having tested it on corn bread, biscuits and cakes."

"I have also served it for table use and think only an expert could detect it from a good grade of butter."

Amy Smith is the head of the Cookery Department of the great woman's magazine, "Today's Housewife."

Dixie Margarine is pasteurized into purity in every ingredient.

Churned by  
**Wm. J. Moxley Inc.**  
CHICAGO



## SELF SEALING WAX PAPER

—made right for your purpose and product. Known from Coast to Coast.

All such prepared foods—plain wrapped or packaged—as depend upon air-tight covering for keeping qualities will open up fresh and crisp if hermetically sealed in our SELF-SEALING WAXED PAPER.

"The proof of the pudding is in the eating." Ask some of our customers. We'll give you the names, also samples and prices on request.

**WAXED AND VEGETABLE  
PARCHMENT PAPERS**

**Kalamazoo Vegetable Parchment Co.**

KALAMAZOO, MICH.

## "America's Most Famous Dessert"



## JELL-O is Always Ready

"One of the prime merits of Jell-O is that it is always ready. With a package of Jell-O on the emergency shelf and some boiling water, there is no trouble in preparing a dessert which is sure to come out right. By the addition of fruit or cream an endless variety may be produced and the question 'What shall we have for dessert?' is nearer solution than it possibly can be in a household where Jell-O has no place."

*Christine Terhune Herrick.*

**2 Packages for 25 cents**

**The Genesee Pure Food Co.**

Bridgeburg, Ont.

Le Roy, N.Y.



## Small Salmon Pack Predicted For This Year

The 1921 salmon pack will not be more than 20 per cent of the normal six and a half million cases put up in the average season, and canneries that operate will just about salvage their inventories. This prediction is made on the authority of leading packers, brokers and bankers, in close touch with the producing, marketing and financing phases of the industry, who declare conditions do not warrant a larger pack.

There should be, according to experts, a relatively big run of all varieties of salmon this year from the ocean to the spawning beds in the rivers of the northwest from Columbia to the Yukon, this being the four-year and two-year cycle season.

Of Chinook, sockeye, and red salmon, which is not very plentiful, a fair pack will be made, but of the more plentiful and more widely popular pink and chum varieties there will be a small pack.

Canning operations in the Columbia River will be not far from normal volume, it is said. Puget Sound packers are making no preparations whatever to work their plants. In British Columbia there will be no operations, according to the present outlook, except in sockeye packing. There will be but little activity in southeastern Alaska, probably not more than 10 per cent of the ten-year annual average. In Bering Sea and Western Alaska operators are planning to pack all the Alaska red and Chinook salmon they can get, as the last two seasons have been very small runs of these varieties.

The condition of the salmon market and the present state of finances in the industry, according to the best opinion, make it entirely out of the question to put up anything like a full pack in 1921. About one-third of the last pack, more than 2,000,000 cases remains in Pacific Coast warehouses. Eastern and southern jobbers have for a long time been buying in small lots, just enough to meet day-by-day demands, even though pink and chum salmon, which cost \$5 to \$6 a case to pack, have been selling at \$3 a case from Seattle warehouses.

These jobbers are extremely cautious buyers, the last twelve months and more, because many of them have suffered heavy losses as a result of fluctuating prices in many lines. Also, the retail demand for salmon in all parts of the country dropped off one-half during the war and has not until very recently begun to mount toward the pre-war position. The export demand is still practically dead.

Financing of salmon packing is handled largely by Seattle banks. According to authoritative information none of them has made commitment for 1921, and but few applications have been received.

### Guadeloupe's Vanilla Crop

The 1920-21 vanilla crop of Guadeloupe began to be picked and bought by buyers about January 15, 1921, its movement before that time having been prohibited by the various municipalities to prevent its being picked too green and also on account of the fact the early crop offered for sale before that date is usually stolen vanilla.

Guadeloupe buyers began by paying about 4.25 francs per kilo for green vanilla. This was increased gradually to a point where a few sales were made at 7 francs, but the last rates quoted are 5 to 5.50 francs.

When cured the vanilla will be sold for the most part in the United States at the prices then prevailing in New York, and there is therefore usually a large element of speculation in its purchase, due to the fluctuations in the New York market and to exchange.

It is estimated that the present crop of green vanilla is about 200,000 kilos, which, when cured, will amount to about 85,000 pounds, more or less, according to the degree of shrinkage. This will be over twice as much as last year's cured product, which amounted to about 38,000 pounds.

## Sugar Imports Broke Records in 1920

A principal factor in the tremendous increase in the imports of the United States in 1920 was sugar in quantities greater than ever before irrespective of the exceptionally high price. Sugar imports, says a statement by the National City Bank of New York, were far in excess of any earlier year—over eight billion pounds against 7 billions in the immediately preceding year, and an annual average of 5 billion pounds during the war period, this 1920 increase being irrespective of the fact that the average cost abroad of the year's import was 12 1-2 cents a pound against an average of 5.6 cents per pound in 1919 and less than 5 cents per pound in 1918. The total cost abroad of this unusually large importation of sugar at phenomenally high prices was \$1,017,163,456 against \$394,280,434 for the sugar imported in the former high record year, 1919, the addition to our import record in the single item of sugar having thus been over \$600,000,000 in 1920 and accounting for nearly one-half of the phenomenal increase shown in the 1920 imports as a whole.

### Almond Exchange Will Sell Shelled Product

The California Almond Growers' Exchange has established an almond meat department. It has completed and has in operation in the city of Sacramento a \$300,000 nut shelling plant. The association has not yet decided upon its manner of selling the shelled product. The new department was established after the Exchange learned that 80 per cent of the almonds consumed are wanted by the consumer in shelled form. Robert L. Frowenfeld will have charge of this department.

### Food Importers Elect

At the annual meeting of the Associated Importers of Food Products, held in New York, the following officers were elected: President, George O'Hara; first vice-president, R. U. Delephena, second vice-president, H. Wegner; secretary, J. S. Neuman; directors, Herman T. Asche, D. Ries, N. J. Meyer, I. Takstad, H. Gumpertz and W. A. Cody, as well as the officers of the association. Mr. Asche was formerly president, while Mr. Neuman continues as secretary.

## Effort to Sell Honey in Small Pails

In an effort to dispose of last season's honey before the new crop comes in, some California shippers are using more 5 and 10-lb pails, and are promoting campaigns designed to bring these small containers into the hands of the consumer. It is uncertain how permanent the use of small pails will prove to be, but large quantities of honey have been sold in New York City in this way. Colorado factors are canvassing the farmer trade of the Middle West, but find that market conditions have been so depressing that the farmers have little available cash. Throughout the country, sales of 60-lb. cans to the final consumer are said to be much larger than they were a few years ago.

In New York, imported honey continues to dominate the market for sales to confectioners and bakers, as California goods are still considered too high. West Indian and South American refined stock can be bought for 50 cents to 65 cents per gal. of 11 1/2 to 12 lbs. Imports of honey are decreasing rapidly, only 6,899 gals. coming into the country during December, according to the Bureau of Foreign and Domestic Commerce. This compares with a total of 392,118 gals. imported during the past six months, of which 220,454 lbs. were credited to the month of August.

Sales of honey by retailers are very draggy. This is said to be due both to the lessened amount of money in circulation and to the fact that lower wholesale prices of honey have in many cases not been passed on to the consumer.

At the same time, exports of honey are again coming into prominence. During December, over 282,000 lbs. moved out of the United States, the largest total for any one month since last February. Belgium and Germany accounted for 225,000 lbs. of the exports for December. Practically all exports are in cases of 2 cans holding 60 lbs. (5 gals.) each.

Foreign beeswax is said to be depressing the market for native stock. During the past five months a total of 1,028,430 lbs. is reported to have come into the country. Some of the wax is bitter in flavor, and unsuited for use in making comb foundations or candles. Other imported wax is of better grade, and sells at prices which compare favorably with those received for best domestic stock.

### Where Our Peanuts Are Sent

The export of home-grown peanuts from the United States during the month of January, 1921, amounted to 1,074,007 lbs., valued at \$79,866, as compared with 1,095,803 lb., valued at \$86,758 during December, 1920. Canada took 78 per cent of this amount, or approximately 842,449 lbs. Cuba took 148,867 lbs., or 14 per cent; Jamaica, 21,110 lbs., or 2 per cent, and Bermuda, 15,158 lbs., or 1 per cent.

Of the world exports of beef and beef products, the United States furnished 21.8 per cent in 1919, compared with an average of 13 per cent during the three years preceding the war.



# The "Atlas" Label

Protects You

And has Stood for Highest  
Quality and Uniformity  
for Over Half a Century

"Atlas" Certified Food Colors  
"Atlas" Vegetable Colors  
"Atlas" Carmine No. 40  
"Atlas" Genuine Fruit Extracts  
"Atlas" Pure Vanilla Extracts  
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Manufactured at Our Works in Brooklyn, N. Y.

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and Samples Submitted

## H. Kohnstamm & Co.

ESTABLISHED 1851

New York

Chicago

# THERE IS

CLEANLINESS, HEALTH  
INSURANCE, ECONOMY  
AND CONVENIENCE IN



Our **PET**  
BRAND  
Evaporated  
Milk

*The Standard of the World*

Wins and Holds Trade on  
account of its Superior Quality

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## Large Losses Sustained by Food Companies

Commenting on the large losses sustained in business during the past year, due to the fall in prices, the National City Bank of New York pays particular attention to several large companies engaged in food production. First, it mentions the five leading meat packers, Armour, Swift, Morris, Cudahy and Wilson and says:

"With an aggregate capital investment of \$600,000,000 and aggregate sales of about \$3,000,000,000, these companies in a consolidated statement would show no net earnings last year. Losses exceeded profits, and if the statement included the leather companies affiliated with them the showing would be much worse.

"The American Cotton Oil Company, another company dealing with a product of the farms, for the year ended Aug. 31, 1920, showed a loss of \$3,611,560, against a profit in the previous year of \$422,814.

"In mentioning the packing companies we ought not to overlook the Equity Cooperative Packing Company of Fargo, North Dakota, which was promoted for the avowed purpose of keeping the profits of the packing business at home and among the farmers. Stock to the amount of \$2,250,000 was disposed of and about \$600,000 of the proceeds absorbed by the promoters. The company, however, got into business in time to lose, it is reported, about \$800,000 of what was left.

"We referred two months ago to the heavy losses that dealers were taking upon butter in storage. The situation not only has shown no improvement but grown much worse. The bulk of the winter butter supply went into storage at about 56 cents per pound, and has been coming out all the way down to 35 cents, from which there has been a recovery of 7 or 8 cents. Eggs have gone in the same way, falling from about 70 cents to 35, from which there has been a recovery of 4 or 5 cents. Millions of dollars have been lost by dealers in butter and eggs, the mild winter being an important factor in the result. Nobody could foresee when butter and eggs were stored eight or ten months ago that cows would give milk and hens lay eggs at the rate they have kept it up all winter.

"The Quaker Oats Company, which in 1919 had net profits of \$2,679,394 reports for 1920 a net loss on operations and depreciation of inventory of \$5,824,925."

## Sugar Company Earnings Lowest in Many Years

Earnings of the American Sugar Refining Company fell off \$8,480,000, or approximately 80 per cent. during 1920, as compared with 1919, according to the annual report of the company, just made public. This decrease resulted, despite a total volume of business amounting to more than \$350,000,000, or \$50,000,000 in excess of that done the previous year.

Profits were at the rate of one-half cent on each dollar of sales, or less than one mill a pound. Earnings from operations amounted to \$1,802,438, as compared with \$10,283,082 in 1919. Total income amounted to \$8,822,001,

against \$15,250,619. After allowing \$2,000,000 for depreciation and \$3,150,000 for the 7 per cent. dividend on the preferred, earnings on the common amounted to about 8.17 per cent., or the lowest since 1915.

Inventories are now carried at \$45,405,155, against \$15,033,491 in 1919 and more than double the amount of the similar item at any time in the company's history. Cash on hand decreased from \$28,161,879 to \$8,839,933, making it the lowest in ten years.

Amounts receivable have increased from \$6,691,400 to \$12,546,856. How much of this amount may be due from concerns which contracted for sugar at the peak of prices and then refused to live up to their contracts when the slump came, is not revealed. The American Sugar Refining Company found it necessary to institute legal action recently for the recovery of moneys under these contracts.

## Quaker Oats Company Deficit

Earnings of the Quaker Oats Company for 1920 fell far below 1919. The company reports a loss from operations and after allowances for depreciation of inventory of \$5,824,925. In the previous year the company had net profits of \$2,679,394, which, after payment of preferred dividends, was equal to \$21.42 a share on the \$9,000,000 common stock outstanding.

After payment of dividends on both the common and preferred stock last year the deficit charged to profit and loss amounted to \$8,052,425, which reduced that account to \$1,263,163 on Dec. 31, 1920, compared with \$11,565,588 at the end of 1919. This report explains the action of the directors in passing the dividends only a short time ago and the sharp break in the stock on the Chicago Exchange.

President H. P. Crowell in his remarks to stockholders said in part:

"This year, in marked contrast with all previous years, our balance sheet reflects a heavy loss. In the first six months of 1920 our business was excellent, the volume exceeding that of the preceding year, and giving us earnings more than sufficient to meet our dividend requirements. In the second six months conditions changed suddenly and from September on we were in the midst of an economic storm, the like of which has never been known."

## Italy's Exports of Fresh and Dried Fruits to the United States

During the first eight months of 1920, according to Commercial Attache MacLean, of Rome, the exports of fresh and dried fruits to the United States amounted to 13,365,690 and 35,527,260 lire, respectively. During May the exports of dried fruits amounted to 11,972,055 lire, this being the leading month in the exports of that commodity to the United States. Exports of fresh fruit in June and July amounted to 4,962,285 and 5,716,250 lire, respectively.

H. J. Mountrey has been made advertising manager of the Borden Sales Company, condensed milk, etc., New York. Mr. Mountrey succeeds A. H. Deute, now general sales manager.

## Corn Products Company Reports Smaller Income

For the year ended December 31, 1920, the Corn Products Refining Company reports net income, after all charges and Federal taxes of \$12,469,626, as compared with \$13,717,486 in the previous year. After all deductions and preferred dividends there was a balance for the common stock of \$10,720,044, equal to 21.44 per cent, against \$11,629,596, or 23.20 per cent in previous year. The sum of \$7,733,004 was added to surplus, after allowing for larger dividends on the common stock.

Of the total surplus of \$43,521,704 at the end of the year the report states that \$12,766,152 is represented by investments in stock of merged and affiliated companies and in miscellaneous securities, including Liberty bonds, etc., against \$10,485,532 in the previous year. In acquiring stock and bonds for redemption and in reducing bonded indebtedness under the sinking fund \$14,614,790 is the proportion expended against \$9,762,885 in the previous year, and \$16,140,762 is the proportion reserved for working capital and new construction, compared with \$15,540,233 December 31, 1919.

## Prosperous New Year For New York Cannery

The first annual report of the New York Cannery, Inc., indicated a prosperous season. New York Cannery, Inc., was formed about a year and a half ago by the consolidation of a number of the large canneries in New York State. The company is capitalized with \$1,500,000 in first preferred stock, \$85,000 in second preferred, and 60,000 shares of common stock of no par value. The preferred stock is on a regular dividend basis.

Reports showed that the corporation had closed one of the best years in the history of the various companies that were merged. There was an extraordinary large pack, exceeding the record of each of the units in the corporation.

Deliveries were good, and the corporation met its dividend requirements after charging off a heavy depreciation on its inventories. A large depreciation had to be written off to meet market conditions. Fruits and jams carried in stock and containing a large percentage of sugar, had to be reduced in the inventories to meet the present low price levels of sugar.

## Cocoa Nut Oil Importations

The United States imported 215,238,516 lbs. of cocoa nut oil during the calendar year 1920, compared with 281,063,213 lbs. during 1919, and 356,088,738 lbs. in 1918. The Philippine Islands were the chief source of supply during these three years, furnishing during 1920 about 71 per cent, or 152,092,723 lbs. of total imports.

Reliable manufacturer will pay \$25.00 to \$200.00 for any recipe accepted for making food product that can be sold to grocery, delicatessen, restaurant, fountain lunch and confectionery trade. Send sample of product made according to recipe and state price wanted. No attention paid without sample. All replies strictly confidential. Box 101 c-o The American Food Journal.



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PLEASE mail to us, marked for the attention "Catalogue Editor," duplicate copies of your current catalogues, circulars, price lists, house organs and all sales literature, particularly that recently issued.

As a form of service and without charge to you, The American Food Journal will place this material at the disposal of our readers in a way that will work to your advantage.

The closer you cooperate with us by placing us on your mailing list, the more we can do for your benefit.

Tell your stenographer to attend to this, if you please.

Yours for cooperation,

The American Food Journal

March 15, 1921



## What is the Function of the Modern Trade Paper?

**O**NE word, SERVICE, is sufficient to answer that question if it means service to the field it covers.—service that is more than an empty phrase,—a living, breathing, red-blooded thing with backbone and a soul!

We believe that the true function of The American Food Journal is to so serve its readers that no problem of interest to the food field may ever be too BIG for it to handle fearlessly and justly, and that no problem of interest to our readers need ever be considered too SMALL to enlist our friendly attention.

**A**DVERTISING is seldom bought. It has to be sold! Imagine a manufacturer walking into a publisher's office and deliberately saying: "I've decided to buy twelve of your best preferred pages; please wrap them up." Or another saying: "Please send me half a dozen of your best back covers, in two colors. Charge them, please."

It simply isn't done in the best advertising circles.

And yet, here is a case where food manufacturers can readily see and appreciate the tremendous value of a publication like The American Food Journal. We are working in your interests, and very obviously we need your co-operation if we are to live up to our fullest opportunities.

To advertise in The American Food Journal is to identify yourself with the most advanced thought in the food world. You need us and we need you. Unfortunately it is impossible for us to call on every one of you and SELL you advertising, but we believe that this is one case where it will pay you to BUY it. Volunteers are called for! We shall be only too glad to furnish full information regarding rates, circulation, etc., upon receipt of your inquiry. Address:

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March 15, 1921

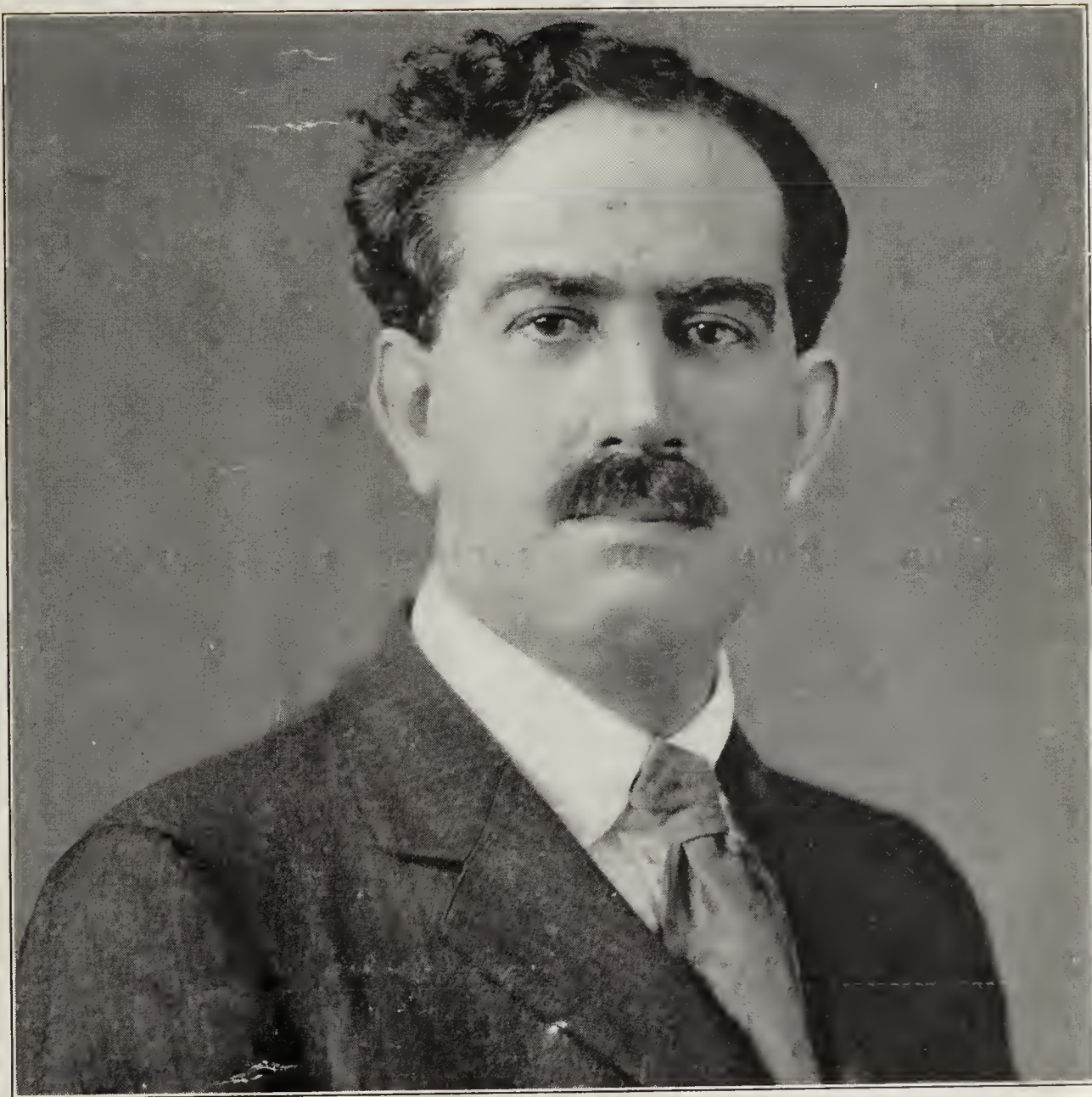


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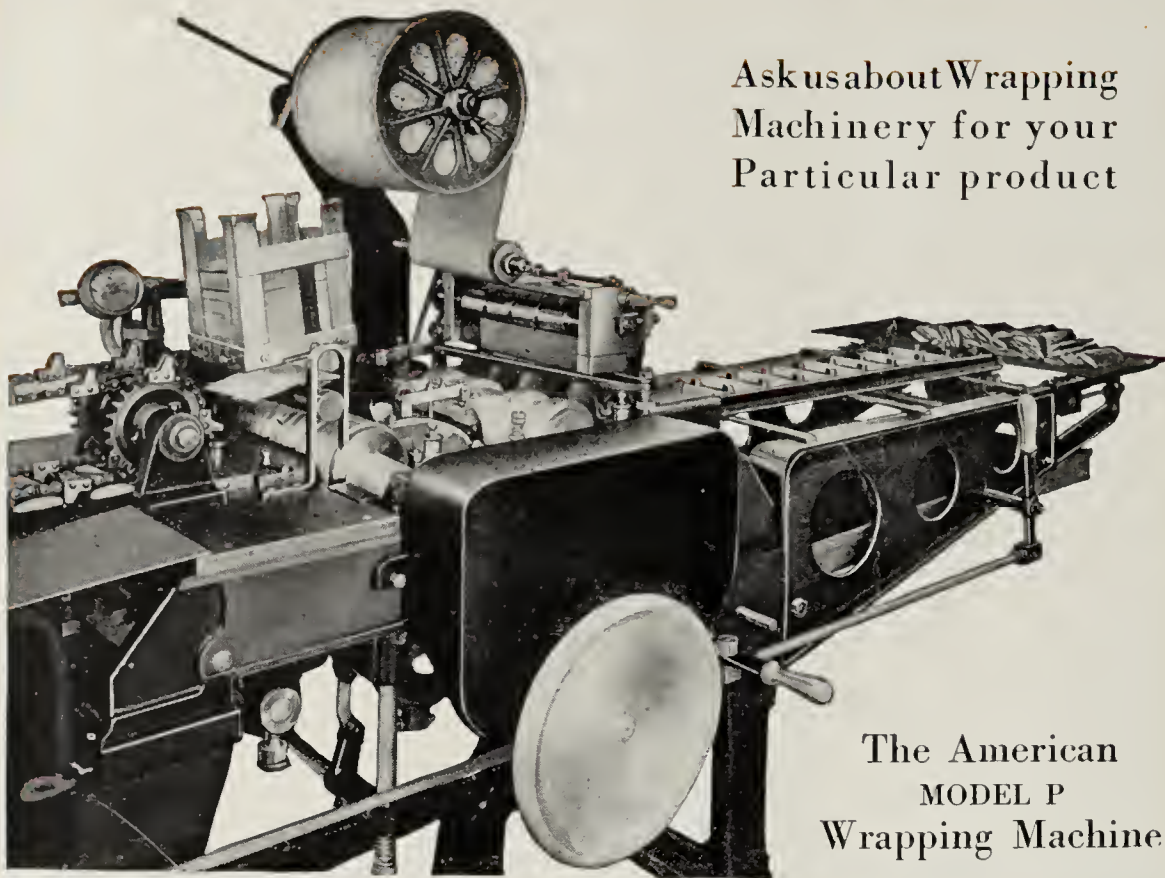
# The American Food Journal

The National Magazine of the Food Trades



**DR. CARL L. ALSBERG**, who has resigned as Chief of the United States Bureau of Chemistry to become Director of the Food Research Institute to be established at Leland Stanford, Jr., University, for which a \$700,000 fund has been created by the Carnegie Corporation.





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# Time to Pull the Trigger!

**D**ESPITE the occasional calamity-howler, The American Food Journal believes firmly that business is on the mend. We see evidences of improvement on every hand, and feel confident that the long-lean winter of discontent through which the food industries have passed is nearing its end.

What, then, is retarding the revival of business? Why are many manufacturers still so backward about coming forward? We believe that the general hesitancy is largely inspired by a desire to see what the other-fellow is going to do. Buying will start actively, in our judgment, just as soon as enough producers, and distributors, and consumers, **believe** that business **is** better, and believe it strongly enough to act.

Why doesn't somebody pull the trigger!

The country is waiting for the man and for the business house with confidence enough in the future to back up this belief with positive action—buying and selling on a basis that will inspire others to join in creating a general business revival.

And may we add that one of the most important agencies for bringing about this improved condition is the use of vigorous, constructive publicity; publicity such as that available through the advertising pages of a broad-gauge publication like The American Food Journal.

Think it over! Our Advertising Manager will be very glad to discuss this interesting subject with you further.

The Publishers.

April, 1921.

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# The American Food Journal

The National Magazine of the Food Trades

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J. T. Emery, President

## The Editor's Column

### THE BOUQUETS ARE COMING FAST

The Editor continues to hear many encouraging remarks on the decided improvement in the editorial character of THE AMERICAN FOOD JOURNAL. Almost every mail brings something or other. These comments are greatly appreciated and they encourage us in the work we are modestly beginning in building up a real "National Magazine of the Food Trades."

### THANK YOU, DR. BARNARD

A typical letter comes from Dr. H. E. Barnard, former Food Commissioner of Indiana, now director of the American Institute of Baking. He writes:

"I have just seen THE AMERICAN FOOD JOURNAL for March. May I congratulate you on its excellence. \* \* \* I am glad to know that it is in such good hands and so well fulfilling its mission."

### FROM A NOTED NUTRITION EXPERT

Dr. E. V. McCollum, of Johns-Hopkins University, one of the country's noted nutrition experts, has greatly pleased us with this comment:

"You appear to be making a great success of THE AMERICAN FOOD JOURNAL, which I have been looking over with interest. If possible I will some time give you some of my utterances for publication."

### A PROMINENT CHEMIST'S OPINION

L. M. Tolman, Chief Chemist for Wilson & Company, Chicago, writes:

"I personally have read THE AMERICAN FOOD JOURNAL for a number of years and found it very useful to me."

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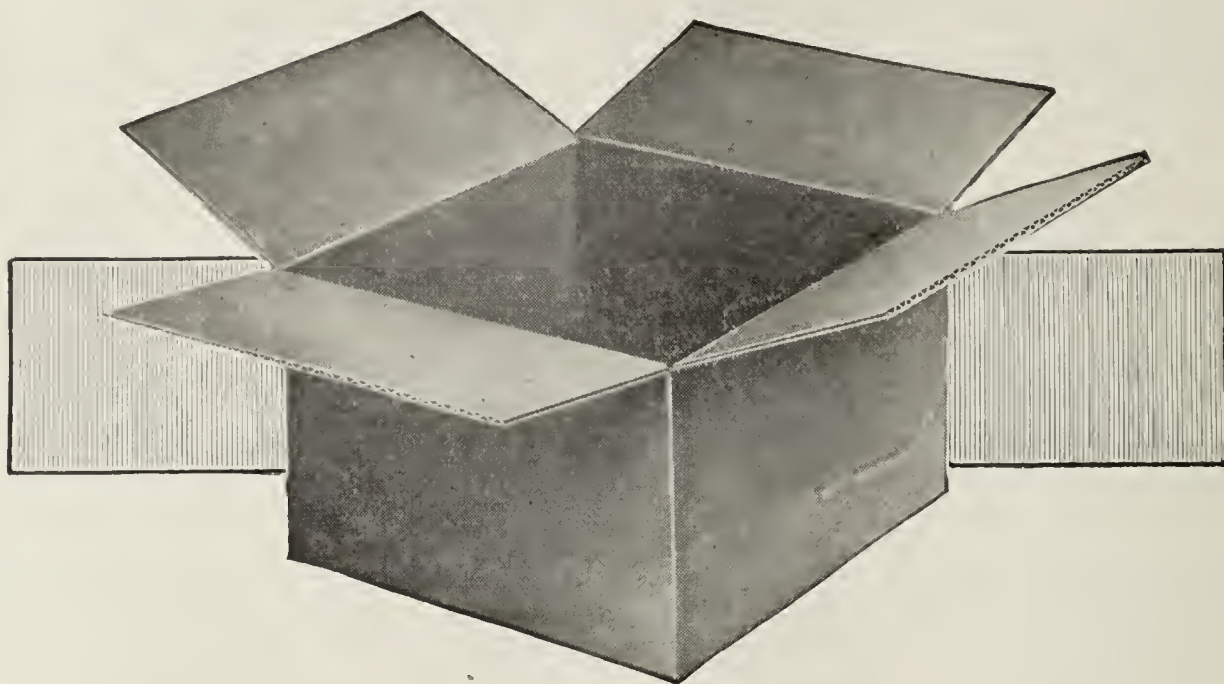
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Chicago Office: 123 West Madison Street; H. B. Boardman, representative. Boston Office: 44 Bromfield Street; F. K. Kretchmar, representative.

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# The American Food Journal

The National Magazine of the Food Trades

Vol. XVI

APRIL, 1921

No. 4

## Commercial Possibilities of Dehydration

### A Review of Some Considerations Affecting This Industry and Its Future Growth

By HENRY W. BANKS, 3rd

Of Banks & Craig, Consulting Engineers and Chemists

UNIVERSITY OF ILLINOIS  
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THE writer wishes to state at the outset that this article is far from complete. The subject is an old one and a large one; the historical treatment of the development of methods for the dehydration of food products would alone demand a considerable treatise. The same thing may be said of other phases of the subject, such as the great industry now developing in our West Coast States, the excellent methods of drying now in use, the research and development that are going forward at present in this country and elsewhere.

In spite of all these facts many people are still unfamiliar with the industry, both as regards its methods and its products. The commercial application and its enormous economic advantages are far from realized. Recent articles have treated of these rather fully. The present article attempts only to touch upon the historical side of the subject; to correlate some facts relating to the requirements to be considered in the installation of a drying plant. A seasoned article will give a general view of some of the more important systems of drying.

Like canning and refrigeration, dehydration is a method for the seasonable and geographical equalization of the food supply. Each of the three has its important field in the economic life of our population. The three methods of equalization are not rivals, but allies; each will take its logical place in the economic scheme. Dehydration is newer and less familiar to the public than the other two, but it is on its way to attain its logical place. As Doctor Wiley said to the members of the National Canners' Association last January, "If I may be allowed to give a word of advice to the National Canners, I would say that they first of all should be parties interested in the further development and application of the dehydrating process." I believe that the same thing might be said (and probably has) to those whose industries depend on refrigeration. The newer development may usurp some portions of the present uses of the older two, but it may be safely said that the three will supplement each other eventually, as they rightly should.

#### In One Sense an Old Process

The industry in one sense is as old as civilization, and such products as raisins, dried figs, sun dried meats and similar foods have long been familiar to almost all peoples. The smoking of meat is a process of much the same kind, but here the drying is supplemented by preservative substances occurring in wood-smoke. The pre-

servation of meat by salting or pickling is another story. In many of the oldest processes, artificial heat was employed, but in no case are these products exactly comparable to those produced by modern methods.

The question of terminology has been disputed at some length. It may be said, without attempting a solution of the problem, that the present tendency seems to be to refer to the old, crude products as "dried," and to use the term "dehydrated" with reference to products prepared with a greater degree of care and with more precise attention to scientific control. In other words, the present connotation of the word "dehydrated" appears to imply the removal of water without removing or altering other substances present. Dessicate means the same thing as dehydrate, but seems, for some reason or other, to be somewhat in disfavor. Good usage and common consent will settle the question of nomenclature. The writer employs the word dehydrate in the sense of removal of water with the minimum loss or alteration of other constituents of the product.

#### Dehydration Stimulated by World War

Interest in dehydration was, of course, greatly stimulated by the World War. It is interesting to note, however, that Masson in France, as early as 1850, dried a great number of vegetables and fruits by what may be termed modern methods. He then subjected them to hydraulic pressure, producing a highly concentrated food product. A somewhat similar mixture of vegetables used in the German Army is stated to have contained 25,000 rations in a cubic metre. Masson dried his fruits and vegetables with a blast of warm air, generally at temperatures in the neighborhood of 70 degrees C. Years later Passburg of Berlin obtained excellent results with vacuum drying apparatus, and among other commercial installations that at the Guinness brewery in Dublin may be mentioned. From such beginnings arose the modern dehydration industry; which, with the war as stimulus, has grown enormously. Much work, especially educational work, remains to be done, but the many workers in the field are adding new scientific information almost daily. An enumeration of the contributions of contemporary engineers, chemists and food experts to the subject is beyond the scope of this article.

#### Commercial Advantages Apparent

The commercial and economic phases of the subject are so apparent and have been considered so thoroughly



in recent literature, that they need hardly be emphasized here. Not only must we consider the great saving of freight charges as compared with canned or refrigerated products, but also the freedom from spoilage, ease of handling, and the cheap containers which may be used. But to realize the potential value of dehydrated products, the dehydration and conditioning must be properly done and under scientific control. It is probable that the greatest advances will first be realized in a strictly commercial manner, rather than in selling direct to the housewife. That is, in such cases as the shipping of dehydrated products to manufacturers of jams, jellies, preserves, candy, etc. Their use in the kitchen will come in time, but it will be in all probability a gradual development.

In this connection may be mentioned the shipment of orange and lemon peels from Italy to English manufacturers of marmalade. The present method of shipment is in casks of brine, and the saving in freight and storage by substituting dehydrated products is quite evident. It goes without saying that these materials must be dehydrated in such a way that they will retain their essential oils and flavors.

The use of banana flour, produced from dehydrated ground bananas is another example of the same sort. This has been used by manufacturers of biscuits and formed a valuable invalid food in French military hospitals during the war. It can undoubtedly be extended to other uses. The fact that only bunches of a particular size are shipped to northern markets gives the producer of banana flour a cheap raw material. Dried eggs and dried milk are already familiar. Hotels, hospitals and steamship lines are using considerable quantities of dried vegetables. Along the same line the use of dried fruits will extend to the ice cream, candy and baking trades.

#### Possibilities in Sugar Beet Industry

Similarly the sugar beet industry presents enormous possibilities in equalizing and extending both the area served by a plant, and the time of production of sugar. The yield of sucrose per ton of beets will possibly be increased as well, where dehydration is done at low enough temperature to preserve the activity of the sugar-producing enzyme.

While speaking of the commercial extension of the field, it may be mentioned that Germany dried more potatoes in the last year of the war than were produced in the United States—in fact, about three times the quantity raised in this country. Potato flour is, of course, an excellent raw material for alcohol. Another and still almost untouched field is that of lobster and crab meat, fish, and a variety of meat products. These suggestions give an idea of what I have called the commercial development.

The second method is the utilization of waste farm products which cannot be marketed, or which are thrown away because the grower does not command the price he wants. It has been stated that approximately half our fruits and vegetables do not reach the table. The causes of this are many, but it would seem that cooperative dehydration plants in farming districts could prevent much of this waste, benefit the farmer, and be made a paying proposition at the same time. Farmers often would rather let a crop rot than take too low a price for it, but this condition cannot exist indefinitely. The tendency at present is in the other direction, and as a country, we are becoming more awake to the necessity of the prevention of the loss of valuable foods. It may well be said that our largest industry is the least efficient. To see acres of rotting potatoes in the United States while European people starve is an indication that even our highly developed

systems of distribution can be improved. Dehydration is not a remedy for all ills, but it has its place, and it has not yet come into its own.

#### Dehydration in the Home

The third method of development is through the housewife. It is probable that this will be the slowest of the three. Excellent dehydrated products in enormous variety are now on the market. It would be interesting to know how many of the readers of this article have eaten even one of them. The possibilities are enormous. One case may be cited. In preparing a vegetable soup or stew the cook may choose from a dozen vegetables, picking out whatever combination or quantity is needed for the particular dish wanted. Powdered onion, garlic, mint, peppers and other flavors are quickly available by the same method. Any quantity may be used whenever it is wanted. Home dehydration is only another step, and splendid results can be obtained by the proper equipment and the proper instructions. A recent book treats of this very fully, and in addition gives numerous tested recipes and methods of employing dehydrated products. Which of these three main lines of development will give the greatest impetus to the growth of the industry remains to be seen.

It is of interest to mention a few of the factors which must be considered in the location and equipment of a dehydration plant. To begin with, it must be situated close to the raw material which is to be dried. This is evident. We can imagine cases where a product of great value might be transported a considerable distance to a plant, but this is in all respects contrary to the economic aspect of the method. Primarily, it avoids the transportation of water.

As regards the product itself, perhaps the first factor to consider is, what degree of heat it will stand for the duration of the drying period. If we are to remove water with the minimum effect on flavor and cellular structure, we must place a limit on temperature. This will vary with different products, and according to what method we use in judging the finished product. A strictly chemical method may be employed; inactivation of enzymes, partial hydrolysis of starches, caramelising of sugar may be mentioned in this regard. Then, too, the appearance of the finished product, both dry and refreshed, must be considered; also its color, smell and flavor. It must not be "cooked." These may be called empirical methods of judging maximum temperature, and they are equal in importance to the strictly chemical.

In this connection it may be stated that temperatures which do not inactivate the enzymes will have little effect on vitamins. Recent work tends to show that oxidation plays an important part in the inactivation of the latter. Much work has been done in this direction and is now in progress, but as each product presents a separate problem, the data needed are many and varied.

#### Moisture in the Air Important Factor

This question is further complicated by another variable, the percentage of moisture in the air used in drying. The temperature will vary again if we dry in a vacuum. The susceptibility of the product to oxidation at different temperatures presents another problem, varying widely with different substances, and here again the amount of moisture in the air is a factor. It is clear that, in atmospheric drying, a large percentage of moisture in the air reduced the concentration of oxygen. This will be referred to again. Few of these questions can be settled other than by experimental work. A perfect combination of moisture, temperature (and other factors) for orange peel, may be a very bad one for potatoes or apples. A temperature that gives us a splendid vacuum dried



banana may produce a black sticky lump in the presence of air. In short, dehydration requires study if its greatest possibilities are to be realized. I am sure that those working along this line agree with me. Drying at too low a temperature may unduly prolong the process, and may even produce spoilage in some materials.

Next, the physical state of the product will be considered. Liquids will be discussed separately. Tomato pulp, for example, may be called a semi-solid. As for solids, the state of division will affect the process. Not only the size of the slices, cubes, or particules must be studied, but even the method of cutting. Most natural substances show a distinct grain, and whether they are cut lengthwise or cross-cut introduces another variable. These facts must be known in working out the best conditions in a given process. The amount of material to be handled per day is, perhaps the next factor. Discussion of this is scarcely necessary, but the weight of water to be removed is another side of this question. This is not altogether determined by the percentage of moisture in the raw product. Just enough must be removed to secure a product that will keep. Too little drying will result in the growth of moulds, yeast, and bacteria; too much will result in a product which is hard and brittle, and which may be difficult to restore anything approaching its original condition. The effect of products of combustion on the material must also be known. Potatoes dried for the fermentation industries have been made in Germany by the direct action of gases from the combustion of coke. This is presumably a very economical method, but it might not be the ideal one for strawberries, or other fruits possessing a delicious flavor. The sort of final product required is of great importance, and will often govern largely the method of drying to be employed.

#### Other Considerations

Still another factor is the tendency of certain materials to dry on the surface. Through this dried layer the remainder of the moisture penetrates with difficulty, and when such products are stored the moisture will diffuse to the surface and spoilage will result. Proper humidifica-

tion of the air, in atmospheric systems, will generally cure this trouble. Here again, each food will require slightly different treatment. In vacuum dryers almost no trouble is experienced from this source. As for the quantity of heat, in all systems we need first, enough to maintain the desired temperature, secondly, enough to produce the required evaporation.

Finally may be mentioned, local labor conditions, power available, and the floor space occupied by the equipment. The way in which the material has to be treated before drying and before packing will have some bearing on the layout of the plant. These last considerations are those which affect almost all mechanical processes, but I have tried to emphasize some of the principal difficulties and some facts that must be known in the proper installation and operation of a dehydration plant.

#### Importance of Proper Conditioning

It may be of interest to speak at this point of one step in the process which is almost essential in all systems. This is usually called conditioning. When the materials have been reduced to a predetermined state of dryness, they are taken from the trays or pans and spread on frames or netting in a cool (preferably dark) room, where good ventilation is maintained. This room must be thoroughly screened to prevent the entrance of insects, and the dehydrated substances must be protected from dust. They remain here for two or three days—in some cases longer. This may be said to bring them to a sort of equilibrium with normal atmospheric conditions, and also results in equalization of the moisture content of the mass. Turning them over occasionally so as to present new surfaces is advisable during this part of the process. As a general rule, this operation directly precedes packing. In most cases, the principal requirement is that the containers should be proof against moths and other insects, unless they are to reach the wettest kind of climates, or to come in contact with actual water. The drying of meats and similar products will be referred later.

A second article dealing with the various methods of drying foods will be published in the May issue.

## Milk Campaigns are Effective

### Many Communities Join in Combat to Eliminate Undernourishment of Children

THE story of a nationwide effort to eliminate undernourishment in growing children is told in the scrapbook of a milk specialist from the United States Department of Agriculture who has cooperated during the past two years in more than forty milk campaigns held in cities and rural districts throughout the United States. All of these campaigns have been held in the interest of better health for children, and in every case where a milk campaign has been put on there has been an increase in the consumption of milk, which has amounted to as much as 30 per cent in some cities. What this means to the health of the country is hard to measure, for milk campaigns put on in one city have resulted in more campaigns in neighboring cities and rural districts, and the milk week has grown into a lengthy education on the food value of milk.

#### Movement Spreads Rapidly

The milk campaign week was started in Connecticut in 1918, when six cities, the first of which were Hartford and New Haven, organized to combat undernourishment

among their school children. The movement spread to Rhode Island, where Newport took up the work, and this campaign was followed in rapid succession by campaigns in four New Jersey cities. Boston then went a step further and put on a twelve-months campaign. Among other cities which have taken up the work are Detroit, Pittsburgh, Kansas City, Topeka, Davenport, Iowa City, Akron, Spokane, Seattle, and Madison. Other cities have planned campaigns; and Iowa and Kansas put on a State-wide campaign for two years, with splendid results.

#### Shows Necessity for Milk

What is behind this great interest in milk? Undernourishment. There are many children that are underweight and undernourished. A survey of 10,000 Chicago school children showed that 40 per cent were 7 per cent underweight, and the investigators were surprised to find that of those underweight, 57 per cent were from comfortable homes in the residential section, and only 16.2 per cent were from the stockyards district. "This fact,"



says the milk utilization specialist, "demonstrates the necessity for teaching more about the value of foods, for the fault here was not poverty but ignorance of the necessity of certain foods for growing children."

A survey conducted in New York showed that from 1914 to 1917 the percentage of undernourishment had increased from 5 to 21 per cent, and had accompanied a decrease of 25 per cent in milk consumption.

Undernourishment is not confined to the cities. In one of the counties in the richest agricultural sections of Kansas it was found that of 639 children in 30 school districts, 140 were at least 10 per cent underweight, and only 42 per cent of them used milk every day. Also, in three townships in Iowa 51 per cent of the children were underweight.

#### Conditions Must Be Right

"From figures like these a city may gauge the necessity of a milk campaign," says the milk specialist. "A campaign is never conducted by the Dairy Division of the United States Department of Agriculture unless there is a local feeling that it is needed. It is then made certain that the milk is pure and wholesome, that the supply is adequate, and the price reasonable to the producer, the distributor, and the consumer. In such campaigns the Dairy Division cooperates always with the State agri-

cultural college, and the college gets the cooperation of the local agencies."

"Two important reasons for undernourishment in children are poverty and lack of understanding of the nourishing properties of certain foods. What milk campaigns do to teach the value of milk for the growing child is that much added to the general progress of child welfare."

#### Value of Milk in the Diet

The value of milk in the diet has been shown very strikingly in the milk-feeding demonstrations carried on in the schools. In Kansas City, for instance, a survey in a certain school district in May, 1919, discloses that 37 per cent of the children were undernourished. They were given a school lunch of milk and graham crackers, and by September the percentage of undernutrition had fallen to 25 per cent. The following March only 3.7 per cent were below weight, and it was expected that all would be brought up to normal in a short time. Similar results have been obtained in other cities.

The value of milk for older children and grown-ups is brought out in a tribute to milk from the president of a woman's college in the South. "For 67 years we have never had a death of a boarding school student. We have our own herd of dairy cows. What milk we can not use we sell. We went through the flu epidemic safely by keeping dormitories heated evenly, and then feeding milk."

## Canners Announce New Membership Plan

**A** NNOUNCEMENT has just been made of a new plan of membership in the National Canners' Association which will mark another great step in the cooperative effort of the canned foods industry.

Although the project is in its early stages, West Coast packers, representing a pack of over 16,000,000 cases, in a single meeting signed applications for membership under the new plan. The first individual signature received in the Mississippi Valley was from a prominent packer who signed for close to 1,000,000 cases. All canning districts will be thoroughly canvassed.

It is contemplated that the support of 75,000,000 cases must be secured in order to make the plan effective. In this respect it is interesting to know that with such a vast respect it is interesting to know that with such a vast representation, the entire work undertaken by the association can be done at a cost of one cent a case, which includes all dues in the National Canners' Association.

The main feature of the new plan is the enlargement of the extensive scientific work now being conducted. The work now being done at Stanford University, the University of California, and Harvard Medical School, it is planned, will be supplemented by similar research at at least two other universities—one in the Northwest and one in the South.

#### Cooperation With Health Officials

Under the new plan, in order to make the research work of the greatest value to the public as well as to the industry, there would be created immediately an organization with the boards of health, giving them the fullest tion to cooperate with the boards of health, giving them the fullest information with reference to canned foods. This organization would also be used for the purpose of getting in touch with the food officials so as to give them a better understanding of the canning industry and canning methods. It is considered most desirable that the cooperation of these officials be secured in suppressing unsanitary canning methods.

There will be a systematic method of acquainting physicians with the fundamental principles of canning and the well recognized sterilization methods in cannery use. The medical profession will be constantly advised of the results obtained in the research work. Special attention will be given to information having to do with the correct diagnosis in alleged canned-food poisoning cases.

#### New Membership Requirements

Under the new plan the requirements for membership in the association will include the sanitation of the plants and the use of wholesome raw materials. Requirements for membership in the National Canners' Association have heretofore been that the applicant must simply be a packer of canned foods in hermetically sealed containers. Inspection in the future would be continued, but conducted on a somewhat modified plan. In the past many packers had the idea, because of the daily visits by inspectors, that this was in the nature of police work. Under the new plan, the association inspection service would simply point out any failure to comply with the sanitary requirements, or suggest changes in the plant or methods. If the requirements are not complied with, the lack of observance will be reported to the Board of Directors of the association for appropriate action.

Instead of the present seal, the membership of the association may use the words "Member of the National Canners' Association" on their labels and stationery.

#### Advertising

It is proposed to spend a considerable sum each year in advertising. Under the new plan, the National Canners' Association as a whole would confine itself to so-called institutional advertising. That would mean a strong presentation to the public by the association of fundamental facts with regard to the wholesomeness, the purity, and the food value of canned foods, without specifying any particular commodity. On the other hand, it is contemplated that various sections of the industry, such as the corn packers, the fruit people, etc., may undertake the advertising of their own commodity.



# "Sugola," a New Type of Sirup

## Description of the Recently Discovered Process of Manufacturing--- Commercial Production Begun

By C. S. HUDSON  
Consulting Engineer, Trenton, N. J.

**EDITOR'S NOTE**—The following article has been written especially for **THE AMERICAN FOOD JOURNAL** by Dr. C. S. Hudson, engineer and sugar expert, descriptive of the so-called Brown Duryea process of the manufacture of sirup from starch—a discovery which is one of the results of the recent war. Not only is the process of interest, but the project also bears interest because of the utilization of a brewing plant for manufacturing a food product, the logical use, it has been claimed, for many of the now idle distilleries and breweries.

WHEN a nation throws its full strength into war its population sooner or later suffers from a lack of food. The efforts of obtain sustenance that have been put forth by nations whose normal food supply was being interfered with by war have led time and time again to scientific discoveries of the first rank that have permanently bettered man's food. The beet sugar industry, for example, was an outcome of the Napoleonic wars and the Continental blockade, likewise the manufacture of starch sirup or glucose. In the one case man discovered an economical method for making pure crystalline sugar from a crop that can be grown in the temperate zones, something which was not known before; in the other case he learned to change starch, his cheapest and most plentiful carbohydrate food, into a sirup, glucose, which can be used in many valuable ways.

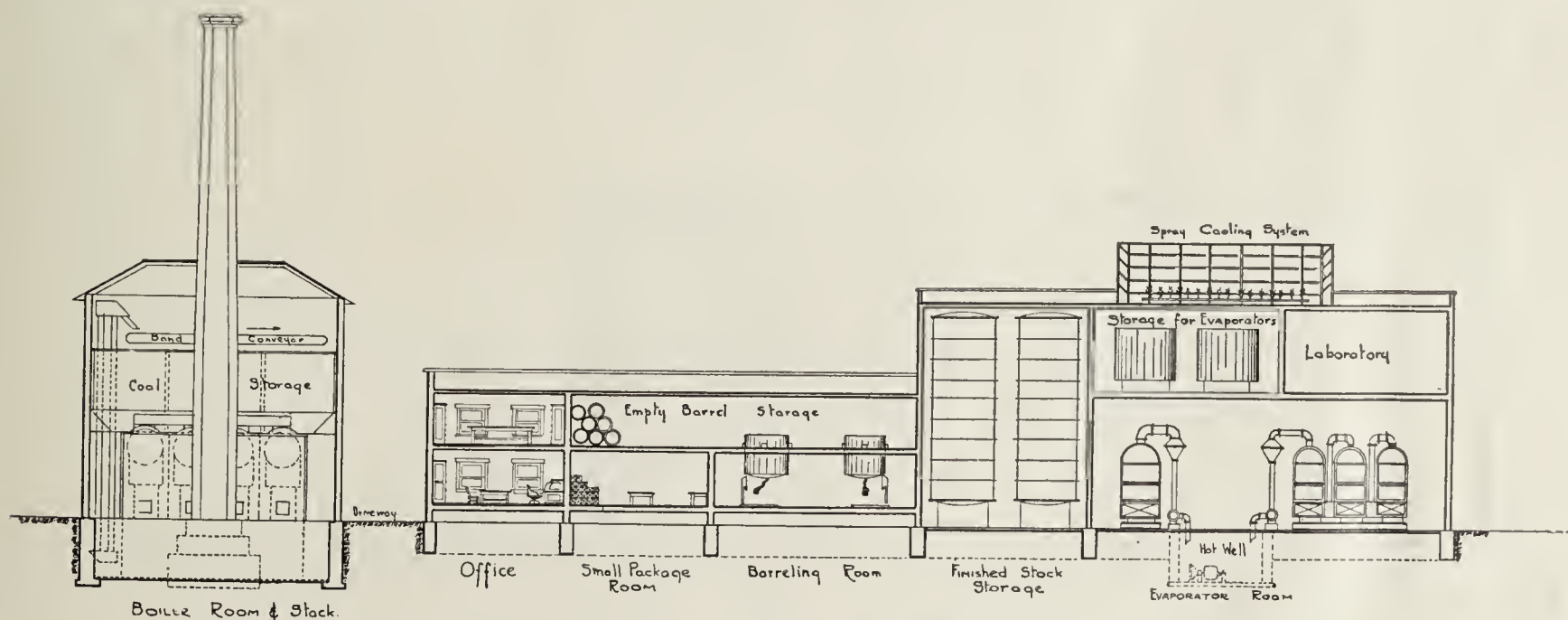
The war through which the world recently struggled made clear again the fact that starch is still the basic and most abundant carbohydrate food; there was not during the war any serious shortage of starchy foods, potatoes, rice or maize being obtainable in nearly every agricultural district. So far as can now be foreseen starch will remain the cheapest carbohydrate food, unless the day comes when some chemist realizes the century-old dream of his brothers, and works out an economical way of transforming cellulose into a food.

In the meantime there may be many new foods that can be made from starch; indeed, it is concerning such a product that the present article is written.

Glucose is more valuable than the starch from which it is made because it is a sirup in physical properties, is somewhat sweet and can be used as an adjunct to sugar. But glucose is not sufficiently sweet to satisfy man's taste. Would it not be wonderful if starch could be changed in a factory to cane sugar? The ripening banana does this in nearly quantitative yield, and so do many other fruits, but these changes appear to depend upon cell life and not yet do we know a way of making decoctions of enzymes that will change our potatoes into cube sugar. The nearest approach that has been made to this very desirable end is the changing of starch into maltose, something by no means novel because the malting process is older than written history.

Maltose is so much sweeter than glucose that one really is surprised on first thought in recalling that the glucose industry developed during a century to a very large scale manufacture, while very little was done in a commercial way towards the production of a sweet maltose sirup from starch. The writer believes that the reason for this overlooking of the better goal may be found in the observation that the production of a maltose sirup is a problem of chemical engineering to a large extent, and the chemical engineers who might have been expected to work on the problem were quite occupied either with the brewing, the distilling or the glucose industries. Dubrunfaut and Cusenier did indeed advance the subject greatly, but the rapid expansion of the glucose industry about the same time overshadowed their work.

If one makes an aqueous extract of sprouted barley—so-called barley malt—and evaporates it to a sirup, the resulting product is sweet and its content of maltose is high, but it possesses an unpleasantly strong flavor of the malt and is very dark in color. If a malt extract is



Cross-Section of Boiler Room and Finishing Building of the "Sugola" Plant



used to saccharify a starch paste through the conversion of the starch to maltose by the enzym diastase present in the malt extract, about ten or fifteen parts of malt per hundred parts of starch are required in order to obtain a good yield of maltose, which, however, is only from 60 to 80 per cent of the weight of the starch, the remainder being largely soluble dextrans of no sweetness. A sirup made in this way still carries a strong malt flavor and much color, and can not be classed as a bland sweet sirup for general use as a sweetening agent. It gives to soda waters, for instance, a characteristic malt flavor, which impresses one disagreeably. All the knowledge pertinent to the making of such a sirup was known a hundred years ago, but it is only recently that the general method as above outlined has been modified in such ways that the resulting sirup can be used for general sweetening purposes.

The principal advances in this art are the result of the extensive researches of Chester B. Duryea, and were disclosed very fully in a United States patent issued to him September 15, 1914, number 1,110,756, entitled "Process of Producing Maltose."

The problem which confronted Duryea was to obtain in the enzymic conversion of starch a very high percentage of maltose and a correspondingly low percentage of dextrin, and to do this by the use of far less malt than had been previously employed. The extent of Duryea's success may be judged from the fact that there is now being manufactured a new type of maltose sirup, which has been given the name of "Sugola," of approximately the following composition:

Maltose, 70 to 76 per cent.

Dextrose, 2 to 6 per cent.

Dextrin, 1 to 4 per cent.

Water, 20 to 22 per cent.

Ash, 0.3 to 0.4 per cent.

Nitrogenous substances, 0.3 to 0.8 per cent.

It will be seen that this composition shows "Sugola" to

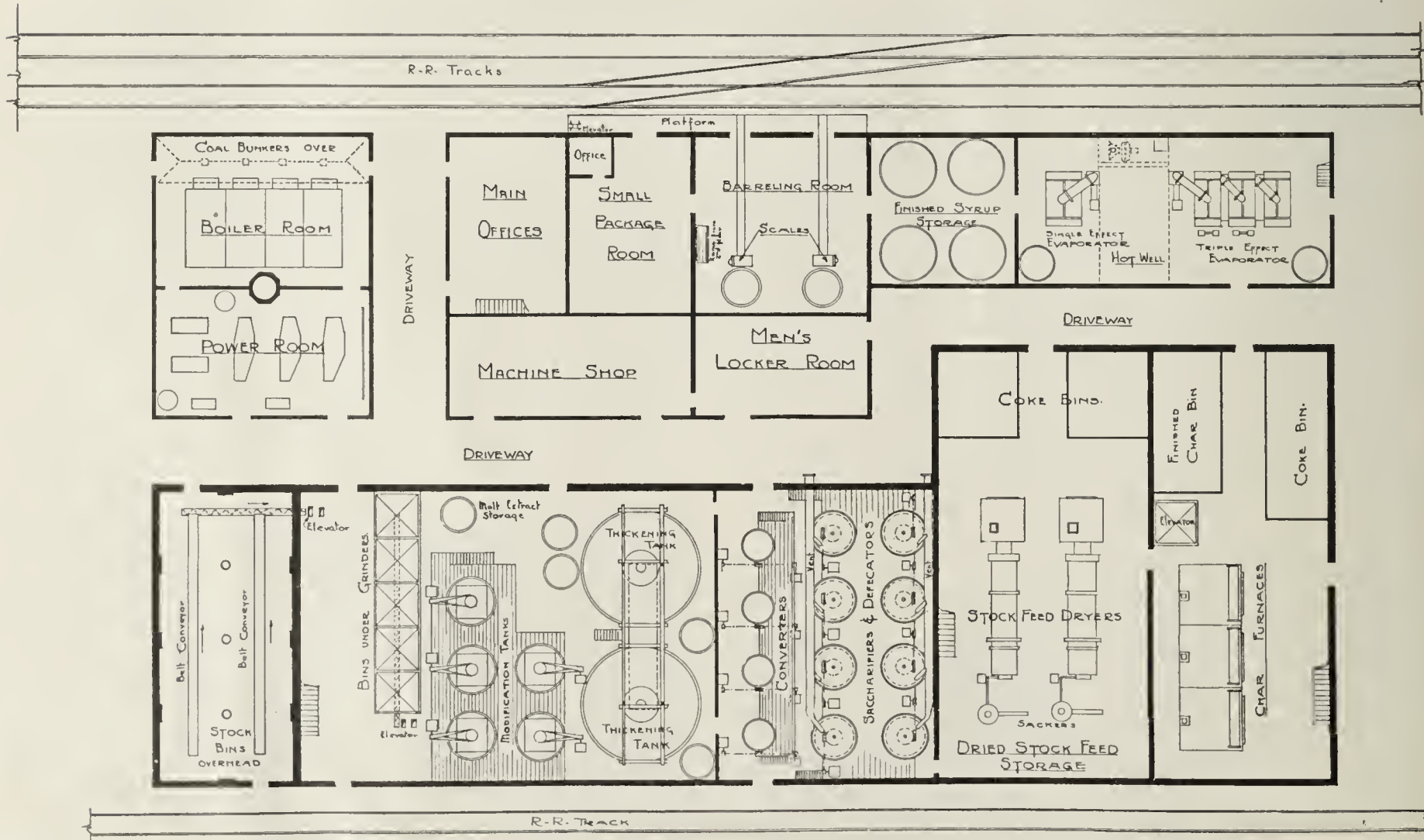
be a new type of maltose sirup, differing from the commercial maltose sirups of the past in containing little dextrin and nitrogenous substances. The most important difference, however, is not indicated by the chemical composition, namely the flavor; the taste of "Sugola" is purely sweet, without any malt flavor.

The improvements which Duryea introduced in the manufacture of maltose sirup relate principally to treatment of the starch preparatory to the enzymic hydrolysis; in the language of his patent he worked out "a process of making maltose comprising providing thick boiling starch, modifying said starch, purifying the modified starch, cooking the purified modified starch paste under acidic conditions, neutralizing the cooked purified modified starch paste, saccharifying the neutralized cooked purified modified starch paste by enzymic action, and finally refining and concentrating the process."

The development of this process to large scale manufacturing has involved the solving of many difficult engineering problems. H. E. Brown, chemical engineer, has skillfully carried out this work for the Sugola Company of America, and a plant at Orange, New Jersey, occupying the buildings and using a large part of the equipment of the former Orange Brewery, is now in operation. The manufacturing process by which "Sugola" is made may be named the Brown-Duryea process, in recognition of the work of the two chemists, whose painstaking efforts have finally brought success.

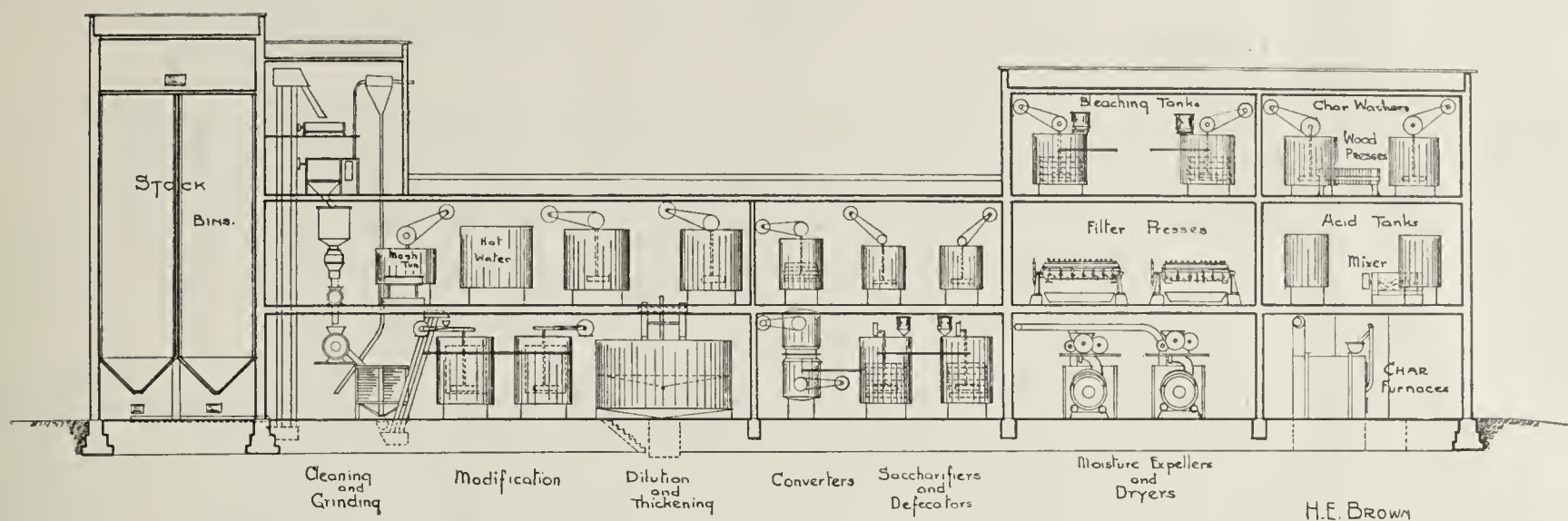
#### The Brown-Duryea Process For Making "Sugola"

Starch, or materials high in starch content, such as corn flour, grits, cassava, etc., constitute the principal raw material. The first step in the process consists in a purification of the starch by a so-called "modification" of it, which comprises stirring it with a 0.2 per cent. aqueous solution of hydrochloric acid at about 55° C. during about six hours. Impurities are dissolved by this treatment, and there is also some action, not fully understood at present, upon the starch granules, which causes them to undergo



First Floor Plan of the "Sugola" factory, rated at 100 Tons Capacity per Day





Cross-Section View of the Manufacturing Building of the "Sugola" Company of America

subsequent cooking and saccharification very readily and with the use of much less malt than would be required if the starch were not modified. The temperature used in the modification process is slightly below the pasting temperature of starch. After modification the starch and acid mixture is diluted with water and the soluble substances and washed out from the starch granules. Starch thickeners are used for this washing.

The washed modified starch is next subjected to limited acid hydrolysis at about 124 to 127° C. with a 0.04 per cent. solution of hydrochloric acid, at a gravity of about 30 Brix. The dissolving and converting of the starch is allowed to proceed until the specific rotation of the solution decreases to about 156°. By this procedure it is sought to convert the starch largely into a mixture of maltose and easily saccharified dextrans, stopping the hydrolysis before much dextrin is formed, since dextrin is less sweet than maltose. The small content of dextrose in "Sugola," 2 to 6 per cent, has its origin during this conversion. The speed of the hydrolysis is so greatly influenced by the temperature that it is only necessary to blow off the converter until the temperature drops to about 120° in order to stop further hydrolysis. The converters are of glass enameled steel construction, heated by steam jackets and equipped with stirrers.

The converted solution is now neutralized in wooden tanks with a small quantity of milk of lime, after which it is ready for the action of the diastase of malt, which converts the dextrans into maltose. An aqueous extract of malt is made by treating ground malt with water at about 55° during several hours' stirring, and the addition of this extract, in the proportion of about 5 per cent of dry malt per hundred pounds of dry starch, to the converted solution is sufficient to cause nearly complete hydrolysis of the dextrans to maltose in solution of a gravity even as high as 30 Brix.

Saccharification is carried out at a temperature of about 50° C. in wooden tanks equipped with stirrers and copper coils that may be used for cooling or heating.

The next stage after the saccharification comprises a filter-pressing of the solution, followed by a thorough decolorizing of the liquor by the use of bone char or suitable decolorizing carbon, employing char filters where bone char is used and filter-presses for the decolorizing carbon. The char and carbon are revived by heating in retorts. In addition to removing the color from the liquor the char and carbon also abstract proteins and flavoring substances, and there is in consequence no malt flavor in the finished "Sugola." After decolorization the liquid is concentrated in a triple effect Swenson evaporator, made of cast aluminum, to a density of about 50 Brix,

is then filter-pressed to remove any cloudiness and finally concentrated to about 42° Baume in a finishing vacuum pan. The product is "Sugola."

The outstanding features of the Brown-Duryea process, which constitute great improvements over the methods heretofore employed consist in the use of modified starch and the employment of a limited acid hydrolysis previous to the enzymic saccharification. Through the initial modifying of the starch it is possible to obtain in the subsequent acid conversion a satisfactory hydrolysis at low acidity (0.04 per cent. HCl) and temperature (127° C.), and in consequence of this hydrolysis the action of the malt diastase takes place readily and thoroughly in solutions of high concentration (30 Brix), which allows much economy in production.

#### Uses of "Sugola"

The sweetness of "Sugola" makes it suitable for a variety of uses. As an ingredient in cakes, confectionery, ice cream, preserves, table sirups, soda fountain sirups, soft drinks, and many other food products, it should prove of much value. Its freedom from malt flavor differentiates it completely from the commercial maltose sirups that have been on the market. There can be no question of its wholesomeness and purity.

#### Construct Record Bottle Labeling Machine

The Edward Ermold Co., New York City, has constructed a bottle labeling machine with a capacity of 167 bottles per minute, said to be the largest labeling unit in the world.

A demand for a machine of this capacity was created by the increased output of a large number of bottling establishments located both in this country and abroad, as the demand for bottled goods has increased to such an extent that the various establishments in question were forced to increase the output of their bottling machinery.

The machine labels eight bottles at one operation, either body labels only or body and neck labels, and has a label holding capacity of between 20,000 and 24,000 single labels, or sets of labels, at one filling.

The output of a 300-barrel pasteurizer can be taken care of by one of these machines.

#### New Courses Of Study In "Food Engineering"

Development of food engineering will be undertaken in new courses announced by the Massachusetts Institute of Technology. The courses are planned with the special benefit of the fish and packing industries in view.



## Directors Selected for Food Research Institute

THE Carnegie Corporation of New York has announced that the election of directors of the Food Research Institute, which is to begin work at Stanford University on July 1, under an agreement between the university and Carnegie Corporation, had been completed. In addition to Dr. C. L. Alsberg, who has been chief of the Bureau of Chemistry, United States Department of Agriculture, the board will comprise Dr. Alonzo E. Taylor and Professor Joseph S. Davis, now Assistant Professor of Economics at Harvard.

Dr. Taylor has been Rush Professor of Physiological Chemistry at the University of Pennsylvania since 1910. He was appointed representative of the Secretary of Agriculture on the War Trade Board in October, 1917.

Dr. Davis was graduated at Harvard in 1908. He was an instructor at Harvard for five years and later an assistant professor in accounting, statistics and elementary economic theory.

The directors will have authority to determine the scientific policies of the institute and the problems to be studied. One of them will be in charge of each of the three separate divisions, which will take up the physiology and chemistry of nutrition, the chemistry of food manufacture, the economics of food distribution and the general problems of agriculture, as related to these interests and to the problems of retail marketing.

Stanford University has just appointed the following members of the advisory committee: Herbert Hoover, Julius Barnes, Dr. J. C. Merriam, J. R. Howard, Dr. William M. Jardine and George Roeding. The advisory committee will include also Dr. R. L. Wilbur, president of the university, ex-officio, and Dr. James R. Angell, president of Carnegie Corporation, ex-officio.

It was Mr. Hoover who first suggested to Carnegie Corporation the need for such an institute, which will provide a fund of \$700,000 for the work.

Mr. Barnes, formerly was president of the United States Food Administration Grain Corporation. Dr. Merriam is president of Carnegie Institution of Washington and was formerly professor of palaeontology at the University of California.

Dr. Jardine has been an educator in agricultural institutions of Utah and Kansas for nearly twenty years, and since 1918 has been president of the Kansas State Agricultural College. Mr. Roeding is chairman of the Horticultural Committee of the State of California. Mr. Howard is an authority on agriculture and is president of the American Federation of Farm Bureaus.

(Further reference to the selection of Dr. Carl L. Alsberg will be found on page 23).

## How Welch Added a New Line of Products After 50 Years' Experience With a Single Product

IN the Fall of 1869 two men were very busy in the little back kitchen of a Vineland, New Jersey, home. After much careful work they had pressed a quantity of especially selected Concord grapes and put the juice up into twelve bottles which they hermetically sealed. The product that Dr. C. E. Welch and his father had made that day was the first commercial grape juice.

Those first twelve bottles were mostly used for the administration of the Sacrament in the little Vineland Church, but other churches soon heard of this "unfermented wine" and in a few years it became necessary to purchase a hand press to take care of the grapes supplying those who had heard of it.

After a number of years it was found advisable to move to Westfield, New York, where a greater quantity of Concord grapes could be obtained. By this time the business had grown from back kitchen capacity to a factory which used several thousand tons of grapes each season.

Welch experience and reputation for quality, backed by suitable advertising, soon made further expansion advisable so that today in addition to the main plant at Westfield, there are plants at North East, Pa., Lawton, Mich., St. Catharines, Ontario, and land has been purchased for a new plant at Springdale, Arkansas.

Years of research resulted in a discovery just as our armies were making their way to Europe. A special process had been discovered to remove crystal grit from a pure grape preserve and carload after carload of this new product, Grapelade, was shipped to the A. E. F. Big repeat orders kept the Welch plants so busy that none of it could be put on the home market until after the armistice had been signed. Success came quickly and national distribution was achieved in two years.

In the spring, Welch inspectors visit the vineyards and, with the grape growers who are showing evidence of tak-

ing the utmost care in the cultivation of their vineyards, contracts are made from Welch grapes.

After the grapes are picked, they are not touched by hands again. On arrival at one of the plants they are weighed and inspected. Conveyors take them through jets of cleansing water to the stemming machines where the berries are separated from the stems and dropped through aluminum pipes to the stirring kettles, also aluminum (all piping and other metals with which the grapes come in contact are aluminum.)

The kettles heat the grapes sufficiently to loosen the rich color and exquisite aroma that lie just underneath the skin and then they are ready for the machines specially constructed to eliminate all skins and seeds.

The Grapelade-in-process then flows through more pipes and into five gallon glass carboys, where it is hermetically sealed and stored until ready for use.

More specially-constructed machines extract the product from carboys and, by the Welch patented process, still another set of machines, remove all the gritty acid crystals. Fresh aluminum kettles receive it, pure sugar is added and just the right amount of heat brings it—without any loss of flavor—to the desired consistency.

There remains the work of filling jars, labeling and packing. Grapelade is then ready for the family table.

The almost instantaneous success of Grapelade led Welch's to develop a full line of pure-fruit-and-sugar lades based on the principal of highest quality fruits pitted or shredded. Peachlade, Plumlade and Strawberilade are from the whole fresh fruits named and sugar. Peachlade and Plumlade have been pitted but otherwise they are the whole fruit. Then came Fruitlade, Currantlade and Blackberilade—all of which are blended with the grape to bring out the full tart taste of the fruits and make fewer seeds. Cherrilade is pitted red cherries, jelled with a small amount of grape.



# The Food Value of Margarin and of the Fats and Oils Used in Its Manufacture

By J. S. ABBOTT  
Sec'y Institute of Independent Margarin Manufacturers

THE writer has frequently pointed out that the composition, digestibility, and food value of margarin (also called margarine and oleomargarine) are practically the same as butter. Butter of course contains milk and the margarins contain animal or vegetable fats or both. According to Luhrig 97.55 per cent of margarin is digestible and 97.88 per cent of butter is digestible. According to Smith (1) a pound of margarin containing 83 per cent of fat and 1.2 per cent of protein had a food value of 3525 calories. A pound of butter containing 85 per cent of milk fat and 1 per cent of protein had a food value of 3410 calories. As a matter of fact there is seldom if ever any butter on the market that contains more than 82 per cent of milk fat. There is no denying the fact therefore that, measured in terms of digestibility and calories, the units of measurement of food values, margarin is always equal if not superior to butter. These facts were recognized by such well known authorities as Barterelli, Hulbgren, Landergren and the Massachusetts State Board of Health. (2)

The digestibility of the fats and oils entering into the composition of margarin is likewise quite close to that of margarin and butter. The digestibility of "neutral," which is made of the leaf fat of swine is 97 per cent; oleo oil, which is made of beef fat, 96.8 per cent; cottonseed oil, 97.8 per cent, coconut oil, 97.9 per cent; peanut oil, 98.3 per cent. These figures are found in Bulletins Nos.

310, 505, and 613 of the Office of Home Economics of the United States Department of Agriculture. Some of these oils are hardened (hydrogenated) preparatory to their use in the manufacture of margarin. They are then as digestible as lard, according to Halliburton and Drummond. And lard is as digestible as butter, according to the Bulletins of the United States Department of Agriculture just mentioned.

## Taste, Looks and Texture

Aside from these rather technical units of measurement of food values, foodstuffs have other properties which make them desirable or undesirable. The taste, looks and texture of foodstuffs are properties that make for or against them in our markets. The taste of margarin comes from the ripened milk which is used in its manufacture. The taste of butter is likewise due to the flavors which are developed in milk or cream during the ripening process preliminary to churning. The texture of margarin is very similar to that of butter. Margarin would look like butter if class legislation had not prohibited the coloring of margarin and permitted the coloring of butter. Colored margarin looks like colored butter. Uncolored margarin looks like uncolored butter except when cows are on green pastures.

## Vitamines

Within recent years, nutrition experts have discovered that foodstuffs contain more or less of certain unknown

## Facts About Margarin Production

### Production of Margarin Yearly by Countries

Spain .....	2,640,000	1920
United States .....	391,283,000	1920
United Kingdom (England, Ireland, Scotland and Wales) .....	728,000,000	1920
Belgium .....	55,440,000	1920
Germany .....	220,000,000	1900
Norway .....	52,360,000	1910
Netherlands .....	123,000,000	1900
Denmark .....	87,302,000	1919
Sweden .....	74,345,000	1915

### Trade Marked Brands of Margarin

In 1918 there were a total of 179 trade-marked brands of margarin on the market in the United States. Of this number there were 130 brands of margarin made exclusively of animal fats and a mixture of animal and vegetable fats. There were 49 brands of margarin made exclusively of vegetable fats.

In 1918 there were nine margarin factories that made only the nut oil and vegetable oil type of margarin. There were 27 factories that made exclusively vegetable oil margarins and margarins made of a mixture of animal and vegetable oils.

There were three factories that did not make an exclusively vegetable margarin.

Number of margarin factories in each state in September, 1920:

California .....	4
Colorado .....	1
Illinois .....	16
Indiana .....	2
Kansas .....	4
Maryland .....	3
Massachusetts .....	2
Michigan .....	3
Minnesota .....	2
Missouri .....	5
Nebraska .....	1
New Jersey .....	9
New York .....	4
Ohio .....	7
Oregon .....	1
Rhode Island .....	4
Texas .....	1
Washington .....	1
Wisconsin .....	3
Total .....	73



and still unidentified substances commonly called vitamins which play an important role in the growth and health of man and beast. Vitamins have been divided into three classes, viz., fat soluble A, water soluble B, and water soluble C. B and C are not found in fats and oils. A consideration of them is not undertaken in this paper.

Fat soluble A is found in greater or larger quantities in dozens of our common foodstuffs. The United States Department of Agriculture recently published a statement that "fat soluble vitamins (A) are found in butter, eggs, milk, and certain animal organs such as the hearts, kidneys, and liver, and to some extent in other fats as well as in green vegetables. They also exist in certain seeds." Except in the phrase "to some extent in other fats," there is nothing in the above statement about the vitamin content of margarins. The fact is the United States Department of Agriculture has never tried to find out by researches of its own whether our margarins are efficient or not efficient in the fat soluble vitamins. Neither have the Departments of Agriculture of the several states done so. Even the nutrition experts of the United States, with one of two exceptions, have not investigated margarins with reference to vitamins. One of them said he had not done so "for obvious reasons." If the reasons are "obvious" it is unnecessary to comment upon them.

Just what foodstuffs contain appreciable quantities of the fat soluble vitamin A has been the subject of tedious investigations by nutrition experts for about 10 years. A compilation of all the work done on this problem was made and reported in July, 1919, by a committee appointed jointly by the Lister Institute of Preventive Medicine and the Medical Research Committee of National Health Insurance, England. (4) This authority makes the following statement concerning the source and quality of A in our various foodstuffs:

"The primary sources of fat-soluble A are found in the green leaves of plants, and the embryos of certain seeds. The former appear to be the richer source, but very few quantitative data upon the distribution of the substance have yet been obtained. It is, therefore, difficult to attach a definite value to any individual foodstuff as a source of fat-soluble A. This is particularly true in the case of the foodstuffs of animal origin, as their value as sources of that factor is in all probability directly determined by the nature of the diet which the animal has previously received. Thus, the milk yielded by a cow which has for some time past been receiving a diet deficient in fat-soluble A, will, without doubt, sooner or later show the same deficiency.

"The following tabulation of the chief foodstuffs has been made with the object of illustrating the distribution of the fat-soluble A factor. In the absence of quantitative data it has been impossible to do more than to indicate the relative values of the foodstuffs as sources of the accessory factor by the rough method of positive and negative signs. An attempt to give some idea of relative values has been made by the employment of more than one such sign in certain cases.

#### Foodstuffs Containing Fat Soluble Vitamins

Lettuce	Margarin prepared from
Spinach	animal fats other than
Carrots (fresh)	lard.
Carrots (dried)	Nut butter (variable)
Onions	Mutton and beef fat
Potatoes	Cod-liver oil and other
"Fat" fish, as herring, salmon	fish liver oils.
Fish roe	Herring oil, salmon, or cod oil

Wheat embryo	Liver
Maize embryo	Kidneys
Rice embryo and bran (i. e. so-called rice polishings).	Heart
Wholemeal bread	Brain
Millet	Sweetbreads
Bananas	Linseed
Nuts (walnuts)	Linseed cake (after expulsion of oil)
Cheese (prepared from whole milk).	Peas
Eggs (yolk)	Kidney beans
Eggs (dried)	Soy-beans
Butter	Cabbage (fresh)
Cream	Cabbage (dried)

"It is present in very small or negligible amount in lard (pig fat) and in vegetable oils, as, for example, linseeds oil, olive oil, cottonseed oil, coconut oil, palm oil; peanut or arachis oil is reported to contain it in larger amount."

It will be noted in the table above that the Committee by inference stated that margarin made from lard does not contain the fat-soluble vitamin. It also stated that the vegetable oils are deficient in the fat-soluble A. Since that time, however, the fat-soluble A content of animal and vegetable oils has been the subject of more careful investigations. Many of these fats and oils hitherto reported as deficient or entirely lacking in A have been found to be rich in it. Daniels and Loughlin (5) found that rats fed on a ration from which all fat-soluble A had been removed, except what was in the lard of the ration, "grew normally, reproduced, and reared their young." They got the same results with cottonseed oil. Both of these fats are used in the manufacture of margarins.

Notwithstanding these facts there are some who are still carrying on a propaganda to the effect that butter is the only fat that contains the fat soluble vitamin. Volume 12, No. 6 (Feb. 9, 1921), of the Butter, Cheese and Egg Journal contains the following false statement:

"Butter contains vital food substance; it is an indispensable food. No child can grow and develop without receiving a liberal supply of this vital element, the principal source of which is butterfat. Other food fats do not contain this vital substance, hence there is no substitute for butter."

Just as lard and cottonseed oil have recently been found to contain quite a plenty of fat-soluble A to promote growth, reproduction and the rearing of the young animals, just so it may be that all other fats and oils hitherto reported to be deficient in it are quite efficient in this respect. Likewise the same kind of fat or oil at different times and under varying circumstances may contain different quantities of A. Osborne and Mendel have separated butter fat into yellow fat rich in fat soluble A and into white fat which is deficient in it (6). It is not present in some grades of butter. Steenbock (7) says the vitamins content of butter varies with the breed and feed of the cow. He reported one experiment in which the butter fat of a cow fed exclusively on alfalfa hay did not contain any fat soluble A (8). He also found that butter rich in natural color (not the color added to it by the creamerymen) is also rich in fat soluble A (9). While butter to which creamerymen add color is generally if not always poor in fat soluble A. Coloring white butter therefore conceals inferiority. According to the States and Federal food and drug laws, a foodstuff is adulterated "if it be colored in a manner whereby damage or inferiority is concealed." White butter artificially colored is therefore adulterated butter.

The fact that most of the common articles of food



contain efficient quantities of the fat soluble A vitamins, and the recent discoveries that several foods hitherto reported to be deficient in them have been found to be rich in them doubtless caused Katherine Blunt (10) to make the following statement in her closing remarks on the Present Status of Vitamines:

"It is difficult to say what is the importance to the average individual of giving thought to these three vitamins in choosing the diet."

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## Methods of Testing Flour to Determine Quality

**W**HITENESS in flour is not necessarily an indication of superior quality—in fact in many cases it shows inferiority and the possibility of bleaching or other processing which may be detrimental.

This is the statement of Dr. B. R. Jacobs, director of the National Cereal Products Laboratories, Washington, D. C. Dr. Jacobs recently made an extended study into the standardization of flour and flour products.

Early traditions connected whiteness with superiority, because in the older days of the milling industry, white flour could only be produced from the central portions of the wheat kernel, and the flour which came from the outer portions was always mixed with a considerable percentage of bran, screenings and other by-products. This central flour had greater strength, that is, it was capable of producing a light, well risen loaf of uniform texture.

Under modern methods it is possible to separate the waste from the outer portions of the wheat and render it as white as the heart flour, so that today, whiteness is only to be considered as indicating freedom from refuse and not as showing other flour qualities.

Some millers use a bleaching process, unless its use is prohibited by law, and such bleaching is regarded as a violation of the food and drugs act if the bleaching conceals inferiority of the flour, as for example by whitening portions to make them look like flour, and in all cases bleached flour must be labeled as such. As an instance of the fallacy of holding color a gauge of the value of flour, durum wheat, introduced into this country in the last few years, produces the greatest strength in flour, so much that it is frequently necessary to mix it with soft wheats to prevent toughness in bread, and durum wheat produces the yellowest flour.

#### How to Test Flour

The most satisfactory test of flour is to bake it into the form in which it is desired to be used; but there are other indications which will show quality. These include color, odor, taste, feel and granulation.

Whiteness may be considered as a criterion with flour from the softer wheats, but with hard wheat flours, the natural color is creamy or yellowish white. An ash gray color usually indicates refuse matter, and the presence of the latter may sometimes be detected as black specks under the magnifying glass.

Good flour should have an odor and taste like freshly ground wheat. It should be free from sourness and disagreeable odors.

Good flour falls apart easily when squeezed, but retains

the impression of the fingers. Squeezing is a good method of telling hard from soft wheat flour, as hard wheat flour falls apart more readily.

Flour should not contain so much moisture as to form pellets when rolled in the hand. Dampness can easily be detected by thrusting the hand into a quantity of flour.

Good flour should be granulated sufficiently to show some slight grittiness when rubbed between the fingers. The teeth also should be able to detect grittiness. This characteristics more noticeable in hard wheat than soft wheat flours.

The strength of flour can best be ascertained by mixing it into a dough with about half its weight in water and kneading thoroughly. A strong flour will produce an elastic dough which will hold its shape in the ball and will not stick to the fingers. Dough from weak flour will be sticky and will flatten out.

The crumb of the loaf is one of the best indications of the quality of the flour, the color, size, and the thickness and structure of the cell walls being considered.

#### Classification of Flour

Flours are customarily divided in the market into two classes, soft wheat flours and hard wheat flours. As to quality, the grading is along the line of purity with respect to bran, germ substances and other refuse. The main grades are:

Patent flours—High, short or fancy; standard; long.

Straight flours—Full, regular or standard straight; cut straight; stuffed straight.

Clear, or bakers' flour—First clear; second clear.

Low grade red dog.

These terms have only an incidental value to baking qualities or culinary properties and none to its nutritive value.

Patent flours are from the central portions of the wheat kernel and are very free from refuse. A short patent is supposed to be composed of a smaller and more select portion of the flour than long patent, and standard patent is between the two grades, the grade being indicated by a percentage.

Clear grade flour is composed of that flour producing portion of the kernel which remains after the patent has been removed and naturally contains a considerable portion of refuse.

Straight flour is composed of the entire flour producing portion of the kernel. A "cut straight" is one which lacks some of the purest strains of the mill run. A "stuffed straight" is one to which some clear or low grade flour from another wheat or another mill run has been added.



# European Research on Vitamines

## Several of the More Important Contributions to Foreign Journals Are Abstracted

*Since the war many articles have been published in European medical and scientific journals on subjects of diet and nutrition, in which consideration of the importance of vitamines has been paramount. Abstracts of several of the more important of these contributions have been made for THE AMERICAN FOOD JOURNAL by Dr. Edward Preble of New York City.—EDITOR.*

**VITAMINES IN RELATION TO SCURVY AND RICKETS.**  
R. T. Davidson, M. D., M. R. C. S., Medical Officer of Health, The Maldens and Coombe, U. D. Abstract from the Medical Officer in the Dental Record (English), February, 1921, vol. xli, no. 2.

The author refers to the great interest in the subject of vitamines at the 1920 meeting of the British Medical Association at Cambridge. The interest of the general practitioner in these subjects lies in their relationship to the diseases scurvy and rickets of childhood. Others interested are members of the welfare societies which have to do especially with the health of children. The author regards the field as one which is practically unworked and submits some of the results of his personal experience. At the discussion of the British Medical Association the consensus of opinion in regard to vitamines was that absence of these substances from the dietary was one cause, but not the sole cause, of scurvy and rickets. It was also agreed that the antiscorbutic vitamine is not destructible by ordinary heat of cooking, for thoroughly well-cooked floury potato beaten up with infants' food has the ability to prevent or cure the scurvy of early childhood. American authorities assert that milk dried by the hot air process loses but little of its antiscorbutic properties. They add that cows may be fed on antiscorbutic fodder to the advantage of infants. In regard to rickets, the fat-soluble vitamine, when not over-refined, is almost a specific remedy for this affection.

Does the cause of these affections lie in the mother, the child or the food? The mother must receive a sufficiency of fat-soluble and antiscorbutic vitamine and the infant must be able to digest and assimilate the mother's milk. The hand-reared infant must necessarily be provided with both kinds of vitamines.

In 1917 the author became superintendent of a Surrey county welfare center for infants. There was at the time a shortage of butter and milk and both mothers and infants appeared to be undernourished. Both scurvy and rickets were noticeable in many infants. Those not breast-fed were being fed on condensed milk and proprietary foods. The author at once condemned these two classes of foods and placed all bottle-fed babies on a food ration of dried milk and fruit juice. They all showed improvement up to two or three months; after which their condition was stationary. Evidently something was still lacking. The author sought to change the source of the milk from cows reared on the lowlands to cows grazed in the uplands—the sole reason being that the latter are naturally hardier and more robust. In other words he selected a Devonshire breed which produced a milk noticeably rich in fats. Dried milk from these Devonshire cows gave superior results apparent even to the mothers of the children, who began to ask for it in preference to the other. The author felt the necessity of an extra

source of fat, and added a preparation of red bone marrow extracted from the rib bones of the calf with a further addition of malt sugar.

The result was a surprise, for not only did the babies improve but the mothers began to include the mixture in their own diet. At present the formulae for a 4-hourly feed for these babies is as follows: Milk powder, 1½ oz.; red bone marrow 2 or more teaspoonfuls and sugar 1 oz. with 1 pint of water. To this mixture, which has a close resemblance to human milk, one should add daily one or two teaspoonfuls of orange, lemon or turnip juice.

The inspector who reported on the state of these infants (numbering 77) chanced to be a woman physician who found no evidence whatever of scurvy and but little which pointed to rickets. Of three doubtful cases two were of notably tuberculous ancestry and the third showed a marked lack of care. The lesson is that the milk cow can usually be made to prevent these deficiency diseases and that in the bottle-fed any substitution of cow's milk must be made along vitamine lines.

### LACK OF VITAMINES AND STARVATION

Lumiere made a report before the Academy of Medicine, Paris, on November 30, last, with the title "Avitaminosis and Inanition" (Bulletin de l'Academie de Medicine, volume 84, number 38). He has made researches on this subject for years and finds that when animals are fed on food deprived of vitamines the digestive organs become sluggish, losing their natural tone. From this he infers that the natural function of the vitamines is to excite the activity of the movements and secretion of the digestive organs. Thus the digestive fluids are no longer able to break up the molecules of the food substances and prepare them for assimilation by the body at large. Despite the taking of an abundance of food the animal deprived of this power, virtually starves. Studied in the pigeon the phenomena caused by absence of vitamines include the following: Emaciation, depression, weakness, spasmodic lateral movements of the head, etc. The paralyses and incoordination of movement are seen in only about a third of the birds and it is thus an error to look on these symptoms as essential to deprivation of vitamines. This picture of disease is unlike that of simple starvation in which we do not see phenomena like moving the head and paralysis, and this discrepancy requires some explanation. The theory has been that in deprivation of vitamines certain special symptoms appear as a result of this shortage, which are absent in simple starvation. Lumiere then reversed the experimental conditions and gave the pigeons plenty of vitamines with an insufficiency of the regular food. The result was that in two weeks' time the paralysis and incoordination of muscular action invariably supervened. In other words the paralysis which is so essential to the disease beri beri in man is not specific, but can result both from lack of vitamines and lack of food in general. Either or both conjoined can cause the phenomena of starvation.

### A POROUS STATE OF THE BONES DUE TO UNDER-FEEDING

A. Chelmonski, of Warsaw, attending physician to the Infant-Jesus Hospital of that city, describes a new bone disease which developed in Poland



during the German occupation of 1917-18. He called attention to its existence at the time and now gives a detailed account of it in *La Presse Medicale* (Paris), for February 9, 1921, vol. xxix, no. 12. When this affection first appeared and long afterward, famine conditions were prevalent; but now with better feeding conditions the malady is no longer encountered. The familiar name given by the author is "the alimentary disease of the bones" while the scientific term proposed is *osteoporosis alimentaria*. The symptoms comprise spontaneous pains in certain bones, with tenderness on pressure. The former were chiefly present in the ribs, the sacrum and occasionally the vertebrae. These pains were made worse by motion and pressure. Others of the bones were mostly spared. Occasionally the skull bones showed sensitiveness. The x-ray showed plainly that some of the lime of the bones had been absorbed, and the same fact was apparent at autopsies. The patients all presented notable evidences of underfeeding and there was a notable absence of food articles containing lime and phosphorus. When placed in bed and given sufficient food and especially uncooked dishes, recovery took place slowly. The greatly reduced condition was evidently responsible for the slow response to treatment. The affection was presumably due to absence from the diet of sufficient ordinary food as well as of mineral matter and vitamins. The same famine conditions also produced a condition closely resembling osteomalacia in which the bones may become flexible; but since true osteomalacia has never been attributable to underfeeding this second type of bone disease must be regarded as a variation of the first.

**THE WATER SOLUBLE B VITAMINE CONTENT OF CERTAIN VEGETABLES.** Major George C. Dunham, Medical Corps, U. S. A. *The Military Surgeon*, February, 1921, xlviii, 2.

Many attempts have been made to determine the comparative amounts of vitamine present in the different food products, but no method is available which will isolate the vitamine as a chemical compound in measurable quantities. Since an unknown substance isolated from yeast which stimulates the activity of the latter is believed to be the vitamine in question, attempts have been made to determine the amount of the latter by the measured result. In theory the amount of the vitamine in the yeast should be in direct proportion with the artificial activity of the yeast as shown by the rate of multiplication. The earlier researches appeared to show the existence of such a law but subsequent investigators have been unable to verify it and a definite ratio has not been demonstrated. The yeast test is therefore of questionable value and investigators have been thrown back to the original method of feeding animals and birds, which line of research has now been pursued for the past 6 or 7 years. Many of the results of this method are sufficiently well known. The research for the water soluble B vitamine has usually been made with young white albino rats. The basal ration, satisfactory otherwise for growth requirements, is devoid of vitamine but the latter is independently administered. By varying the amount of the latter the growth rate can be studied, after having first determined the normal rate of growth. (The latter, however, is by no means an easy task.) If the animal is growing at the normal rate no amount of extra vitamine can accelerate this rate but the excess vitamine must be stored, because after the diet is deprived of it, the animals continue to grow at the normal rate of any time up to 2 or 3 weeks. Further evidence of excess of vitamine is seen in the appearance of the latter in the urine and bile.

The author has experimented with young rats with the

following basal ration: casein, 20 per cent; starch, 61; butter fat, 15 and mineral matter 4. In the absence of vitamine, growth was arrested and at this point some vitamine-containing vegetable was added to the diet, beginning with small amounts and increasing slowly. After a given period when the animal ceased to gain, 500 mgm. of yeast added to the ration brought the growth rate up to normal. In other words, when compared with yeast there was a deficiency of vitamine in the given vegetables. The latter comprised potato, cabbage, carrots and canned peas—all given both cooked and raw; also spinach and turnip which were given only when cooked.

The important truth was brought out that more or less vitamine is lost in cooking. The greatest loss was found in boiled potatoes without skins, where it was nearly 50 per cent. In boiled potatoes with the skins and in baked potatoes the loss was about a third and boiled carrots also suffer a similar loss. The loss in boiled cabbage was about one-fourth, while cooked canned peas lost less than 10 per cent of vitamine.

If the vegetables are dried and compared with dried yeast as a standard with a value of 20 units, the raw potato contains 15.4 units, boiled potato with skins 10.5, baked potato 10, boiled without skin 8, boiled spinach 10, raw cabbage 14.3, uncooked canned peas 8.7, boiled canned peas 8, and boiled turnips 9.5. Hence raw cabbage has more vitamine than any other dietetic article tested, for raw potato and carrot are not articles of diet. Peas lose much less vitamine through cooking in comparison with the other articles.

**VITAMINES.** Office International d'Hygiene Publique, November, 1920.

The author of this editorial communication mentions in succession the original discovery that paralysis could be caused in pigeons by giving them polished rice grains without other nourishment; the isolation by Funk of an active principle which he termed vitamine from rice bran and beer yeast, which could cure this deficiency disease; and the scurvy-like disease which can be produced in guinea pigs by feeding them exclusively on cereal grains and bread. The sterilization of certain foods also produced scurvy in infants, although such foods had originally a content of vitamine. It became evident that the two forms of vitamine involved in the foregoing reports were quite distinct from each other, and that in their absence from the diet two distinct diseases were set up, one of which presented nerve paralysis while the other resembled human scurvy. The former showed much greater resistance to heat than the latter, which was rapidly destroyed by the ordinary sterilizing temperature. The typical food source of the anti-scurvy vitamine is orange or lemon juice, while that of the original vitamine is filtered self-digested beer yeast. A mixture of the two should be antagonistic to any one of the known deficiency diseases. The paralyzed pigeons are in no wise benefited by orange or lemon juice, nor can the beer yeast preparation favorably influence scurvy. It was then discovered that a third vitamine which had no favorable action in pigeon paralysis or guinea pig scurvy existed and could stimulate the growth of young animals. This so-called growth vitamine comprised two elements, one of which was soluble in fats and the other in water. The former is known as A and the latter as B.

The next step in the evolution of our knowledge was that a close connection existed between the vitamine of rice bran and yeast and the water soluble or B "growth vitamine." They occur in the same classes of food stuffs and have many properties in common. Apparently they are identical, possessing a double activity over growth



and equilibrium. On the other hand there seems to be no connection between the fat soluble A vitamine and the vitamine of fresh fruit juices. This leaves us then with three vitamines, the water soluble B, the fat soluble A and the anti-scurvy. The fat soluble vitamine A is equally necessary to growth with its water soluble soluble associate, but has no power in antagonizing the pigeon paralysis. But if withheld from the diet of small animals there is produced a special deficiency condition characterized by emaciation and a state of the eyes known as xerophthalmia (dry inflammation of the eyes). We know that all of these substances produce their characteristic effects in very small quantities. A fact as yet unexplained is this: when deprived of vitamines the so-called ductless glands which furnish the internal secretions or hormones tend to disappear, but while it is evident that the vitamines have a stimulant action on these organs the same statement has been made still more strongly of the glands of external secretion; failure of the digestive fluids is one of the first consequences of withholding vitamines and accounts for the early emaciation seen. The most impressive fact in every day experience is seen in nursing infants in whom heat sterilization of cow's milk is productive of scurvy, the latter yielding quickly to return to unsterilized milk and to the use of orange juice.

**MODERN QUESTIONS OF NUTRITION.** A. Gurig (Vienna). *Wiener Klinische Wochenschrift*, February 24, 1921, xxxiv, 8.

As a result of underfeeding during the war statements about nutrition previously accepted as final have been exposed to doubt. Thus the average food requirements found in tables were seen to be too high. The old figures of Voit had indeed been disputed long before the war through the results of the labors of Chittenden, Fletcher and Hindhede, although these were concerned chiefly with the protein fraction, and to some extent with the fat. Apparently war experience has not proved that man can flourish on a smaller number of fuel food units or calories than the tables allow him. In regard to the minimum requirement of protein and fat, the extensive application of Hindhede's teachings in Denmark has not advanced the solution of the problem of the nutrition of a nation. The war shortage in other words did not confirm his teachings, although he is able to show certain good results of undernourishment in the previously overfed. The protein requirement of the individual is guesswork. We know that too much protein is irritating and injurious and may assume that 130 grams daily is the minimum requirement. If too little is taken there is a loss in daily calories which must be made up from the carbohydrates or fat. Contrariwise, too much protein diminishes the tolerance toward carbohydrates, for while this is not apparent in the healthy it can readily be shown to exist in certain diseases, as diabetes.

In Austria fat calories are now among the cheapest, ranking with potatoes and cereals. Sugar, fruits and vegetables, the very foods recommended by Hindhede as the cheapest before the war, are now from two to five times as dear as fat. The subject of mineral food requirements has recently become prominent, for during the war there was known to be a shortage of lime. This refers only to the lime available for utilization by the body, for while the amount actually consumed might be up to the requirement the consumption of plants containing oxalic acid was excessive and the combination of the latter with the lime led to the elimination of this mineral before it could be utilized. Or it may be also true that under insufficient nourishment the cells could no longer appropriate enough lime for their needs. In any case feeding with substances rich in lime could not rem-

edy the state of affairs. Probable deficiency in dietetic phosphorus is contrasted with the vast waste of phosphates annually through the Vienna sewers. Or great interest was the deficiency of iodine during the war. As this shortage was believed to favor the development of goitre the school children were given annually for a period of ten days a certain amount of iodide of potassium. This precaution certainly did cause the disappearance of numerous cases of goitre and many have prevented many others. Old people were made very sensitive to the action of iodine as a result of underfeeding, and when the iodide was prescribed medically for hardening of the arteries, etc., they tended to develop the symptoms of overaction of the thyroid gland.

In regard to vitamines these are derived originally from plants, for no animal is able to form them in his own body. Hence the vitamines of milk, butter and meat come originally from the grass on which the cow or steer feeds. Admitting the striking symptoms caused in small laboratory animals by feeding with substances which are vitamine-free the author states that certain other species of animals are much less susceptible to this deprivation and advises us to be slow about accepting this teaching as at present constituted. Some of the alleged deficiency symptoms are simply those seen in deprivation of iron and lime.

### Scientists Endeavor to Improve Cannery Crop

Developing tomatoes having a better red color, pea strains which will resist "blight" and "root rot," and many other problems of direct interest to cannery are now in process of investigation by plant specialists in different parts of the country, according to C. G. Woodbury, head of the National Cannery Bureau of Raw Products Research, who recently returned to Washington from an extended trip through the Middle West.

In connection with the tomato pigment studies, Mr. Woodbury stated that the problem is "first to develop and standardize a method for rapid and simple measurement of the amount of lycopin (red-color pigment) and second to determine whether there are any constant differences in different strains, and if so through pure line breeding to isolate and propagate the strains having the greatest amount of lycopin and consequently the best red color." Botanists of the University of Michigan, as well as scientists in other places are now engaged in this study.

Outstanding canning crops problems were discussed at a conference at the Michigan Agricultural College, East Lansing, Mich.

It was decided at this conference that among others, the needed lines of investigation are fertilizers and rotation to insure most successful production of canning crops under Michigan conditions; variety improvement through line breeding and selection of sweet corn, peas, tomatoes and beans; immediate investigation of specific diseases, such as corn root-rot, pea "blight," tomato leaf spot, bean mosaic and bean anthracnose.

Investigations along these lines by the Michigan Agricultural College promise to be of great practical helpfulness to farmers and cannery.

"A number of conferences were held with Professor A. T. Erwin and others at the Iowa Agricultural College, Ames, Iowa, during the Iowa cannery short course," Mr. Woodbury stated. Professor Erwin, who is head of the truck crop section of the Iowa Agricultural College, has long been interested in the problem of better seed stocks for Iowa cannery, determination of best methods of curing and drying seed, etc.



# FOOD NEWS FROM WASHINGTON

## Flood of Food Bills in Congress

### Many Measures, New and Old, Introduced at Opening of Special Session

Washington Bureau

The American Food Journal

622 Albee Building

**F**OOD questions will be prominent among the matters taken up during the special session of Congress which convened on April 11. Immediately upon the opening of the session a large number of bills dealing with food were introduced; while some of the measures were new, the greater number were bills which had been introduced last session and failed of action.

The food question, from the farmer to the consumer, is one of the most important problems which will be considered during the next few months. The railroad situation, tariff, revenue and many other matters of national importance, all have a bearing on this subject. The first named, especially, is of interest to the food industry, since the high rates which now prevail materially affect the shipment of all commodities across country. It actually costs far less to transport most commodities from Europe or Asia to this country than it does to ship a like amount from one section of the United States to another.

Because of the multiplicity of bills already introduced to deal with this subject, it is impossible here to deal with each one on its merits. The following list, however, will acquaint the readers of THE AMERICAN FOOD JOURNAL with the measures which they will have to watch. It should be borne in mind that this is written three days after the opening of the session, and that many more bills may be expected within the next two or three weeks. On the first day of the session, alone, more than two thousand bills were introduced in the House of Representatives; at the close of the second day, more than 2,500 public bills, 2,900 private bills and forty-odd resolutions had been introduced in the lower House, and more than 600 bills had been brought into the Senate. Out of this total of more than 6,000 measures, the following dealt with food:

H. R. No. 6—Imposing temporary duties upon certain agricultural products to meet present emergencies (emergency tariff bill), introduced by Representative Young, of North Dakota.

H. R. No. 10—To fix the metric system of weights and measures as the single standard of weights and measures, by Representative Britten of Illinois.

H. R. No. 11—To protect the public against false pretenses in merchandising, under trademark or special brand, of articles of standard quality, by Representative Kelly of Pennsylvania.

H. R. No. 14—To regulate interstate and foreign commerce in live stock, live-stock products, dairy products, poultry, poultry products and eggs, by Representative Haugen of Iowa.

H. R. No. 4—To repeal the internal-revenue taxes upon wholesome foods and the special license taxes imposed upon producers and dealers in such wholesome foods, by Representative Aswell of Louisiana.

H. R. No. 43—To authorize agricultural colleges and experiment stations to investigate and to teach the science and art of manufacturing and using oleomargarin, by Representative Aswell of Louisiana.

H. R. No. 65—To amend Section 8 of the pure food law of June 30, 1906, by Representative French of Idaho.

H. R. No. 67—For the protection of foodstuffs in the District of Columbia, by Representative French of Idaho.

H. R. No. 68—To punish the speculation by any person or body of persons for the purpose of cornering the market, by Representative French of Idaho.

H. R. No. 147—To prohibit the manufacture, sale, or transportation in interstate commerce of misbranded articles and to regulate the traffic therein, by Representative Barkley of Kentucky.

H. R. No. 168—Levying a tax upon future sales of grain on any exchange or board of trade, by Representative Dickinson of Iowa.

H. R. No. 189—Providing for a tax on pure fruit-juice beverages, by Representative Hawley of Oregon.

H. R. No. 213—To protect fish not remaining the entire year within the waters of any state or territory and authorizing the Department of Commerce to define the



seasons and regulate the manner and conditions under which they may be taken, by Representative Linthicum of Maryland.

H. R. No. 221—To authorize the establishment of a fisheries experiment station on the coast of Massachusetts, by Representative Lufkin of Massachusetts.

H. R. No. 232—To promote agriculture by regulating the distribution of live-stock products, dairy products, poultry, poultry products and eggs, by Representative Anderson of Minnesota.

H. R. No. 261—To tax the privilege of dealing on exchanges, boards of trade and similar places in contracts of sale of grain for future delivery, by Representative Haugen of Iowa.

H. R. No. 282—To prevent the hoarding and deterioration of and deception with respect to cold-storage foods, to regulate shipments of cold-storage foods in interstate commerce, etc., by Representative Hutchinson of New Jersey.

H. R. No. 2170—To establish a fish-cultural station in Louisiana, by Representative Lazaro of Louisiana.

H. R. No. 2297—To prevent hoarding and deterioration of and deception with respect to cold-storage foods and to regulate shipments of cold-storage foods in interstate and foreign commerce, by Representative Sabbath of Illinois.

H. R. No. 2331—To regulate grain exchanges, by Representative Steenerson of Minnesota.

H. R. No. 2341—To authorize the Secretary of Agriculture to establish a farm-produce exchange, by Representative Summers of Texas.

H. R. No. 2343—To provide that the United States shall build warehouses in conjunction with the several states and in co-operation with farmers' co-operative associations for the storage of farm products not perishable, etc., by Representative Swank of Oklahoma.

H. R. No. 2345—To establish a fish-culture station in Colorado, by Representative Taylor of Colorado.

H. R. No. 2363—Regulating future sales of grain—by Representative Tincher of Kansas.

H. R. No. 2364—Providing for the storage of certain grain under Federal custody, by Representative Tincher of Kansas.

H. R. No. 2365—Providing relief for owners of crop of 1917 before announcement of Federal price-fixing policy, who sold such wheat after August, 11, 1917, by Representative Tincher of Kansas.

H. R. No. 2373—Authorizing associations of producers of agricultural products, by Representative Volstead of Minnesota.

H. R. No. 2439—To amend Section 4 of the act of May 9, 1920, in regard to adulterated butter, by Representative King of Illinois.

H. R. No. 2461—To establish a fish hatchery station in Tennessee, by Representative Byrns of Tennessee.

H. R. No. 2471—To establish a fish-cultural station in Arizona, by Representative Hayden of Arizona.

H. J. Res. No. 17—To authorize the sale of surplus foodstuffs by the Secretary of War, by Representative Kahn of California.

H. Res. No. 16—Calling for an investigation of agricultural organizations and associations relative to the control and price of food products, by Representative Gould of New York.

H. Res. No. 30—Providing for an investigation by the committee on agriculture of certain cereals, etc., by Representative Mason of Illinois.

S. No. 75—Imposing temporary duties upon certain agricultural products, by Senator McCumber of North Dakota.

S. No. 80—To establish a fish-cultural station in North Dakota, by Senator McCumber of North Dakota.

S. No. 326—To prohibit interstate shipments or transportation of certain food products; to define and to prohibit transportation and sale of adulterated or misbranded food products; to regulate traffic therein; to define and regulate cold storage, and to regulate dealing in cold-storage food products, by Senator McKellar of Tennessee.

S. No. 328—To raise revenue by taxing certain articles of food held in cold storage, by Senator McKellar of Tennessee.

S. No. 329—To reduce the tax on oleomargarin, by Senator McKellar of Tennessee.

S. No. 397—Providing for a fish-cultural station in Arizona, by Senator Ashurst of Arizona.

S. No. 399—Preventing the sale of grain in future markets, by Senator Caraway of Arkansas.

S. No. 522—Authorizing the licensing and control of corporations engaged in the storing of food products for interstate shipment, by Senator Owen of Oklahoma.

S. No. 527—To establish an interstate marketing system, by Senator Owen of Oklahoma.

S. J. Res. No. 12—Authorizing the President to require the United States Sugar Equalization Board (Inc.) to take over and dispose of 13,902 tons of sugar imported from the Argentine Republic, by Senator Wadsworth of New York.

S. J. Res. No. 13—Authorizing the sale of foodstuffs in the possession of the War Department to foreign governments, by Senator Wadsworth of New York.

S. Res. No. 31—Directing the Interstate Commerce Commission to investigate the present high freight rates on citrus fruits, vegetables and other perishable farm products, by Senator Trammell of Florida.

### Secretary Weeks Recommends Sale of Canned Meats Abroad

Efforts may be made to dispose abroad of the eighty-one million pounds of surplus meats still held by the War Department. All attempts to sell these meats in this country have proved unsuccessful, only a small amount having been disposed of here.

In a letter to Representative Kahn, of California, chairman of the House Committee on Military Affairs, Secretary of War Weeks has recommended that Congress pass legislation removing the present prohibition against the sale of surplus foodstuffs to foreign countries and conferring upon the War Department the "widest authority" to dispose of surplus stocks.

"The War Department has been endeavoring for more than two years to sell in the United States large stocks of surplus canned meats," wrote the Secretary. "Every known means available has been employed to move this surplus in the domestic market. It has been advertised from coast to coast in quantities and prices which would attract all classes of buyers. The War Department has even attempted to dispose of these meats through established retail stores.

"Notwithstanding all the efforts to market these meats, including extensive advertising, there still remains about 81,000,000 pounds surplus in the War Department storehouses. It is my belief, in view of the fact that these canned meats have now been on the market for over two years, that the American public has conclusively shown that it will not absorb this large surplus. It is well known that these canned meats can be sold abroad, providing the prohibition is removed.

"In view of the above, I most urgently recommend



that necessary action be taken by Congress at the earliest possible date to remove the prohibition against the sale of surplus foodstuffs to foreign countries, and that the widest authority be conferred upon the Secretary of War to enable him to offer these meats to foreign countries on liberal credit arrangements. It is believed that in view of the prospect of spoilage, these meats should be disposed of preferably to nations having fair credit, but that they should be disposed of if necessary to any nation faced by serious food shortage, even though the prospects of immediate reimbursement to the Government are slight. In other words, that in the disposal of these canned meats, the humanitarian aspect of the matter be taken into consideration.

"In the last analysis, it would in my opinion be more

advisable to give such portion of the meats as could not be sold to advantage to certain under-nourished nations, rather than see this large quantity of foodstuffs spoil in our warehouses."

Accompanying his letter, Secretary Weeks transmitted a resolution which he suggested be passed to permit the disposal of these meats, and which provided that (the Secretary of War be authorized to sell to any foreign state or government with which the United States is at peace at the time of its passage, upon such terms as he may deem expedient, any foodstuffs, now or hereafter found to be surplus, which are not needed for military purposes and for which there is no adequate domestic market.

# Dr. Alsberg to Head Food Research Institute

## Appointed Director of Research Work at Leland Stanford, Jr., University---Resigns From U. S. Bureau of Chemistry

Washington Bureau

The American Food Journal

622 Albee Building

THE resignation of Dr. Carl Lucas Alsberg, to accept the appointment of director of the Food Research Institute, to be established at Leland Stanford, Jr., University by the Carnegie Corporation, deprives the Department of Agriculture of one of its most important executives, and the Government of an official whose work has done much to improve the food supply of the country, while the Food Research Institute of Leland Stanford, Jr., University will be the richer by the services of a man whose studies have carried him into every phase of the food question.

As chief of the Bureau of Chemistry since 1912, Dr. Alsberg has delved into questions of food production, adulteration, and distribution from every angle. As chief enforcing officer of the food and drugs act and the tea act, he has had occasion to study and deal with foods and drugs from the angle of distribution, while as head of the department's plant chemistry laboratory, he has contributed invaluable service to the country through the solution of the mystery of grain elevator fires and the development of methods of preventing them, to say nothing of research work in more homely questions, ranging from ways by which farmers may tan the hides from their own cattle to methods for feeding cattle with cull potatoes and other waste products.

The Bureau of Chemistry was organized in 1862, when four or five men were able to handle all of its work. At present it has more than 300 chemists, bacteriologists, microscopists, engineers and inspectors, and enjoys an appropriation of more than \$1,250,000 a year for the enforcement of the food and drugs and tea acts and for research work. Problems brought to the bureau today for solution embody ideas unthought of in 1862, while discoveries made and proven in the bureau's laboratories contradict and disprove the formulas and practices existing during the Civil War.

### Bureau Has 24 Laboratories

Twenty-four laboratories and three offices in Washington develop the facts upon which the decisions and policies of the bureau are based, recommend methods for

attacking regulatory problems and conduct scientific investigations. The experts of the bureau, however, do not confine themselves to laboratory work, but make inspections of plants where foods and drugs shipped in interstate commerce are made, with a view to offering manufacturers constructive advice, which will enable them to remedy defects in the processes, improve the quality of their output and the efficiency of their operations, and bring their goods into full compliance with law.

To describe in detail the activities of the bureau under Dr. Alsberg last year would require more space than THE AMERICAN FOOD JOURNAL has at its disposal. More than two thousand cases of alleged violation of the food and drug act were reported to the solicitor of the department for action. Many thousands of cases were investigated, of course, during the year in which no violation of the law was found. More than 22,000 samples were examined, eight thousand being found illegal.

Investigations of cottonseed oil were undertaken during the year; new laboratories were established at San Diego, Cal., and Pensacola, Fla.; new methods of storing and transporting eggs and poultry were devised and urged upon producers and railroads, and methods for distinguishing re-made milk from the fresh article were worked out. These are only a few of the studies undertaken, and probably do not comprise the most important investigations, but they are sufficient to give some sort of an idea of the volume of work performed by this one bureau.

### Dr. Alsberg in Government Work 13 Years

The head of this bureau was 44 years old on April 2, having been born in New York City in 1877. He has been employed in the Department of Agriculture since he was 31 years of age, and for more than eight years has been responsible for all the work and all the results of the Bureau of Chemistry, representing its Washington section, as well as a member of numerous other chemical and medical societies. He was secretary to the section of physiological chemistry of the International Congress of Arts and Sciences at St. Louis, and has held other important posts from time to time.

Despite his rigid adherence to a routine which gives him but little opportunity for outside activities, Dr. Alsberg has found the time to write numerous scientific



articles, both alone and in collaboration with other investigators, among them being the following:

#### Publications Issued Prior to Entering the Department

"Zur Chemie der Paranucleinsäure," P. A. Levene and C. L. Alsberg, 1901. Hoppe-Seyler's Neitschrift für physiologische Chemie.

"Beiträge zur Kenntniss der Nucleinsäure," C. L. Alsberg, 1901. Archiv für Experiment, Pathologie u. Pharmakologie.

"The Influence of Cholic Acid Upon the Excretion of Sulphur in the Urine," C. L. Alsberg. The Journal of Medical Research, Vol. XIII, No. 1, December, 1904.

"Protein Metabolism in Cystinuria," C. L. Alsberg and Otto Polin. The American Journal of Physiology, Vol. XIV, No. 1, July 1, 1905.

"The Cleavage Products of Vitellin," P. A. Levene and C. L. Alsberg. The Journal of Biological Chemistry, Vol. II, Nos. 1 and 2, August, 1905.

"On the Occurrence of Oxidative Ferments in a Molanotic Tumor of the Liver," C. L. Alsberg. The Journal of Medical Research, Vol. XVI, No. 1, March, 1907.

"Concerning the Excretion of Phosphoric Acid During Experimental Acidosis in Rabbits," R. Fitz, C. L. Alsberg and L. J. Henderson. American Journal of Physiology, Vol. XVIII, No. 11, March 1, 1907.

"Über die Hydrolyse der Proteine mittels verdünnter Schwefelsäure," P. A. Levene and C. L. Alsberg. Biochemische Zeitschrift, 1907.

"Beiträge zur Kenntnis der Guajak-Reaktion," C. L. Alsberg. Archiv für Exper. Pathologie und Pharmakologie, 1908.

"On a Globulin From the Egg Yolk of the Spiny Dogfish, *Squalus acanthias* L.," C. L. Alsberg and E. D. Clark. Journal of Biological Chemistry, Vol. V, Nos. 2 and 3, October, 1908.

"The Blood Clot of *Limulus Polyphemus*," C. L. Alsberg and E. D. Clark. Journal of Biological Chemistry, Vol. V, No. 4, December, 1908.

#### Publications Since Entering the Department

"Agricultural Aspects of the Pellagra Problems in the United States," C. L. Alsberg. New York Medical Journal for July 10, 1909.

"The Formation of Gluconic Acid by the Olive-Tubercle Organism and the Function of Oxidation in some Microorganisms," C. L. Alsberg. Proc. Society for Experimental Biology and Medicine, 1909, Vol. VI, p. 83.

"Soluble Chitin from *Limulus Polyphemus* and its Peculiar Osmotic Behavior," C. L. Alsberg and C. A. Hedblom. Journal of Biological Chemistry, Vol. VI, No. 6, November, 1909.

"The Determination of the Deterioration of Maize, with Incidental Reference to Pellagra," O. F. Black and C. L. Alsberg. Bureau of Plant Industry Bulletin 199, December, 1910.

"XV Biochemical Studies Upon the Venom of *Holoderma Suspectum*," C. L. Alsberg. Extracted for Publication No. 177, Carnegie Institution of Washington, pp. 229-244.

"The Introduction of Maize into Italy and Pellagra," C. L. Alsberg. Southern Medical Journal, April, 1912, pp. 170-172.

The Relation of Barium to the Loco Weed Disease. "II. Laboratory Studies on the Relation of Barium to the Loco-Weed Disease," C. L. Alsberg and O. F. Black. Bureau of Plant Industry Bulletin 246, July, 1912.

"Contributions to the Study of Maize Deterioration. Biochemical and Toxicological Investigations of *Penicillium Puberulum* and *Penicillium Stoloniferum*," C. L. Alsberg and O. F. Black. Bureau of Plant Industry Bulletin 270, March, 1913.

### Dr. Carl O. Johns May Succeed Dr. Alsberg

Dr. Carl O. Johns, a former chemist in the Bureau of Chemistry of the Department of Agriculture, has been tendered an appointment as chief of that Bureau to succeed to the position made vacant by the resignation of Dr. Carl L. Alsberg. Dr. Alsberg is to remain head of the Bureau pending the appointment of his successor, and Secretary of Agriculture Wallace has offered the position to Dr. Johns, who has not yet signified whether or not he would accept. It is understood that Dr. J. K. Haywood, chairman of the Insecticide and Fungicide Board of the Department of Agriculture, is among others whose appointment as chief of the Bureau of Chemistry has been advocated.

### Statement by Dr. Wilbur on Food Research Institute

Dr. Ray Lyman Wilbur, president of Stanford University, makes the following statement regarding the new Food Research Institute, established by the Carnegie Corporation with an endowment fund of \$700,000:

"The establishment of the Stanford Food Research Institute is significant, not only because of its importance as the means of carrying on studies that have a direct bearing on all phases of human advancement and welfare, but also because it is a recognition of the West as an intellectual center. This is the first undertaking of such scope and far reaching influence in scholarly research work that has ever come to the Pacific Coast. Stanford University is proud of the honor and opportunity given it through the establishment of the Food Institute as a part of its activities.

"The Hoover war collection, the outgrowth of Herbert Hoover's work and observations during the war, and established by him, is already one of the largest single collections of documentary material bearing on the economic phases of food production, distribution and consumption in existence, and naturally becomes an instrument of immense value and possibilities in the studies which the Institute will prosecute.

"The Pacific Coast will thus become the center of a world-wide and continuing study of a subject that lies at the foundation of every sort of material human activity, and to the West will come a group of exceptionally qualified students, chosen from all parts of the country for training for a new kind of public service, the need and possibilities of which have been demonstrated by Hoover more than by any other single man."

### Many Ways to Use Peanuts

Peanuts are a drug on the market just now. However, peanut shippers now look for increased consumption, which may mean higher prices. In round figures, 900,000,000 pounds of peanuts are grown in the United States every year, and 100,000,000 pounds were imported from Asia last year. About 50,000,000 pounds of roasted peanuts are consumed annually, say marketing experts of the Bureau of Markets, United States Department of Agriculture.

More than 100 different methods of utilizing peanuts, including the making of fancy dyes and wood stains, peanut milk, coffee, and ice cream have been devised, although few of these products are sold commercially. But peanut oil, peanut candy, peanut butter, salted peanuts, peanut cookies, roasted peanuts, and peanuts in a number of other forms run up the annual American per capita consumption to 3½ pounds. Every time certain soaps are used the consumer is partaking of his 3½ pounds.

Fully half of the peanuts grown in the Southern States are fed to hogs. Large quantities of peanuts are exported also, 1,074,007 pounds having gone out of the country during the month of January alone. Of this quantity, 78 per cent went to Canada, where the peanut enjoys popularity with the clove. Cuba took 14 per cent, Jamaica 2 per cent, and Bermuda 1 per cent.

A warrant has been issued by District Attorney W. C. Zabel of Milwaukee, Wis., charging the Schwahn & Sons Co., Eau Claire, wholesale and retail dealers in sausage, with keeping meat in storage longer than the legal limit of one year. This is the first of a series of immediate prosecutions promised by the State Dairy and Food Commissioner on the ground that many Wisconsin meat dealers are selling contaminated meat.



# EDITORIAL

## The Readjustment in Sight

ACTUAL figures at hand for the month of February of this year, on imports, exports or merchandise, business failures, etc., do not show a pleasing state of affairs, compared with those of the same month of 1920.

When, however, we take into account the state of business over the world, and realize that we are passing through a state of depression following an unusual inflation of prices and cost of labor, there is reason for congratulation that conditions are no worse.

And as a matter of fact, close observation seems to indicate a gradual abatement of the storm in manufacturing and industrial circles, the most encouraging sign being the fact that the readjustment of wages and prices, always necessary to a reviving and stabilizing of industry, is progressing steadily, and without serious friction.

A notable incident of the month was the agreement between the meat-packers and their employees, by which the latter accepted a moderate reduction in wages. This compromise was brought about by negotiations in Washington, in which the Secretaries of Agriculture, Commerce and Labor participated. Another was the decision of the Railroad Labor Board abrogating wage agreements.

Agricultural conditions are good. The winter wheat crop is quoted as showing a record condition, and at this time is said to promise a larger yield than last year. At the same time, favorable reports come from the European crops, the acreage of the latter being increased, and conditions are generally favorable.

The movement of goods in the retail trade indicates a reserve buying power and that stocks are being reduced.

Nor is there the amount of distress that might have been expected from so much unemployment, nor the number of business failures that might be expected following so severe a depreciation of values.

A report on the financial and business conditions in the United States, issued by the Guaranty Trust Company of New York, states that:

"The second quarter of the year opens with an appreciable gain in business confidence. Irregular and contradictory as they may at first glance appear, the reports from various sections of the country are on the whole indicative of an improved situation. Certainly, conditions are no worse than they were a month ago and, indeed, the element of greater stability is so pronounced as to lead to a prediction that before mid-year a definite turn for the better will be demonstrated. There has been a slight increase in railroad traffic, and an improvement in the railroad labor situation, because of the policy of retaining efficient workers only. Automobile manufacturers are reopening their plants. Building operations are on the increase. Farm products are being disposed of under pressure of a large new crop, and

the inability of the banks to carry both the hold-over and the new products."

And on the whole, although there is nothing tangible to justify sanguine predictions, there are evident indications that the long sought-for readjustment is at least under way.

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## The Proposed Sales Tax

That the proposed Sales Tax, despite some opposition, is gaining in popularity throughout the country, is confirmed in many ways and from many sources. But whether this popularity is sufficient to swing the new measure in the face of its opposition, is another question. This tax, as it is proposed, is to take the place of the present excess profits tax, which a great many manufacturers throughout the country consider irksome.

An interesting feature in the struggle to substitute the new sales tax for the evidently undesirable excess profits tax, is the fact that in Canada, a turnover tax is favored by the Canadian manufacturers, as opposed to the re-enactment of the business profits war tax. This is merely the Canadian way of telling the same story. The turnover tax and the sales tax are practically identical. At a conference, the Canadian Manufacturers' Association stated that:

"1. The business profits war tax act shall not be re-enacted.

"2. The income war tax, as regards corporations, shall be repealed.

"3. The sales tax now in effect shall be amended and extended sufficiently to provide the necessary revenue."

The public attitude toward the sales tax has been surveyed by the Fidelity and Deposit Company of Maryland. That company sent a questionnaire to its representatives in 1049 cities and towns all over the country, and the answers sent in were based upon expressions of opinion by bankers, lawyers, engineers and business men of all classes. For the purpose the States of the Union were divided into nine geographical districts—New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain and Pacific. To the question, "Should the excess profits tax be abolished?" the answer from every one of these districts was "Yes." To the question, what substitute for the excess profits tax would be favored, the answer from every district was "The sales tax." Here is a pretty broad canvass of opinion, and the answers as given may be accepted as fairly representative. But it is well known among students of the subject that the sales tax has made tremendous progress toward general acceptance during the time that it has been under discussion. This is largely because of the marked simplicity of the plan and its obvious equity and justice.



## A Statement by Secretary Wallace on PROTECTION FOR AGRICULTURAL PRODUCTS

**D**URING the next six months we shall either consciously or unconsciously lay the foundation for a national policy. What we do during this period is very likely to determine, in a large way, whether we shall make of ourselves a "self-sustaining, independent, self-reliant nation agriculturally, industrially, and politically," as President Harding expressed it in one of his speeches, or "whether we shall continue to exploit our agricultural resources for the benefit of our industrial and commercial life." Present troubles are greatly aggravated by unprecedented conditions both at home and abroad. Nations which used to buy most of our surplus, paying us in goods which did not seriously interfere with our own enterprises, are in bad condition financially. They owe huge sums of money to us and to their own people. They need all the money they can raise to rebuild their own industries. They are making desperate efforts to grow their own food; consequently they are buying as little as possible from us, and are trying to sell us as much as possible. They want to send us goods to meet their payments of interest and principal and to pay for what they now buy. They must follow this policy; their salvation depends upon it. They will compete with our industries, both in our own markets and in other markets which can use the sort of goods they produce.

Our own manufacturers see the danger to them in this situation. They see competition becoming more and more severe. Naturally and properly they are laying plans to meet it in every way they can. They want a tariff which will give them protection against cheap foreign goods. They want to cheapen their own cost of production in every way possible, and therefore, are anxious to keep down the price of food products and raw materials. Further than that, our own manufacturers will be wanting to extend their foreign markets as far as possible, especially during this period of financial stress at home. If they can send ship loads of their manufactured goods to the great food producing countries to the south of us and bring back these ships loaded with food products produced on cheap land and with the cheapest of labor, that would seem to them to be good business. But if we look at the interests of the nation as a whole, and indeed, if we take the long view of the future welfare of our great industrial and manufacturing regions, such a policy will be very bad, indeed. What we might gain through temporary enlargement of our foreign markets for manufactured goods will be lost, and much more with it, through the lessened buying power of our own producing population.

**T**AKE the case of the farmer at the present time. Last year he produced large crops of all kinds at the highest cost ever known. The fading away of the foreign outlet for his surplus, together with other causes, has resulted in a decrease in the price of the farmers' products, until many of them are now selling for less than half the actual cost of production. In the face of this situation, foreign products are coming in. In times past we would be inclined to say that our great surplus and low prices are in themselves sufficient protection against foreign competition.

We can not say that now because we seem to be one of the very few nations of the earth which has money and credit and can buy. Take the case of wool, which furnishes the most easily understood illustration. We now have stored up enough wool to last us a year and a half or possibly two years. The prices for wool are far below cost of production. Notwithstanding this, huge quantities of foreign wool still are being brought in and added to our surplus, simply because we have the money to pay. Some of it is passing through to foreign countries, stopping here just long enough to have our credit applied to it. As a result, the sheep industry of the United States is facing ruin, and its intimate connection with the banking and other enterprises of the great range country means trouble all along the line.

But this is simply illustrative of what is happening to producers generally. The cotton growers, the rice growers, the tobacco growers, the grain and live stock farmers, the dairymen, the cattlemen in the range country, the producers of fruit, all are being compelled to take prices below the cost of production. Prices are depressed not alone because of inactive business conditions at home, but because of the importations of competing foreign products.

**I**T IS this situation which must be considered when we take up the matter of the tariff, whether it be the emergency tariff or the permanent tariff. This nation can not afford to permit the breaking down of its own agriculture, even if for a time we can buy food and other farm products cheaper from some one else. Just now we have a great surplus because of large crops and reduced consumption, both at home and abroad, but this condition will not continue. Before the war, consumption was rapidly overtaking production. Our population is growing. We can not under any circumstances afford to permit the present discouraging conditions to continue and result in greatly decreased production, because that decreased production may mean exorbitantly high prices within a few years.

We have not considered as we must the heavy additional burden imposed upon producers by the increased freight rates and the large increase in other marketing changes. These increased rates are a differential imposed upon our own producers and to the benefit of our foreign competitors. Take corn, for example. The freight rate on corn from Omaha to Chicago is now 5.32 cents greater than it was in 1913, an increase of 86 per cent; and from Chicago to New York the freight rate is almost 23 cents per bushel. The Argentine corn grower can lay his corn down on our Eastern coast for about a third of the shipping cost imposed upon our own Western corn grower. It is true that imports have not been large, but every cargo of Argentine corn which reaches our coast is used to depress prices of our corn out of all proportion to the amount shipped in.

The increased freight and other marketing charges on wheat are practically the same as on corn, and is of even more importance on wheat, because of the larger amount exported.



# FOOD LEGISLATION

## Bill in New York for Definite Labeling of Waste Vinegar

The American Cider Vinegar Manufacturers' Association is making an effort to obtain passage of a law recently introduced in the New York State Legislature to enforce definite labeling of waste vinegar. At a recent hearing William W. Armstrong, Rochester, N. Y., counsel for the cider vinegar manufacturers, filed a brief, in which he set forth the following arguments in favor of the bill:

"We have no quarrel with waste vinegar as waste vinegar; our quarrel with waste vinegar is because it is sold as cider vinegar and finds its only market as cider vinegar, because it is not, never has been and never can be cider vinegar.

"The word 'cider' is common to all American and European languages. In every language and in every clime it has meant the expressed juice of fruits. In America it has always meant the expressed juice of apples, and it has never had any other meaning.

"Dried chops, skins and cores are the by-products of apple evaporators. Dried skins and cores are commercially known as waste. They contain apple sugar and solids which are of value, but the solution obtained by soaking waste in water is not cider, for the precise reason that water is not juice, nor is the vinegar produced by fermenting this solution cider vinegar for exactly the same reason.

"We do not, for the purpose of the argument, criticise the quality of waste vinegar; it may be equal or superior to cider vinegar, but we insist that it should be sold on its own merits, and not on the well-known merits, or under the name, of cider vinegar; if it is to compete with cider vinegar for public favor, it should do so under its own name or on its own merits.

"Nor do we care whether it closely resembles cider vinegar or is composed of substantially the same ingredients. The closer it imitates cider vinegar, the more reason for preventing the deception. The most dangerous counterfeit is the one most difficult to detect.

"Nor does the fact that waste vinegar has been sold for many years as cider vinegar give it any additional rights. No fraudulent deception ever became a right through repetition or long continuance. If the public has been deceived for years into purchasing waste vinegar, when it supposed it was getting cider vinegar, that affords no reason why the fraudulent practice should continue.

"For more than ten years the laws and regulations of the federal government have forbidden the shipment in interstate commerce of waste vinegar under the label of cider vinegar, and the amendment now proposed by these bills is in the exact language of the federal regulations on the subject. Our own Bureau of Farms and Markets approves it and desires it.

"The federal government has seized and confiscated shipments of waste vinegar because they were misbranded as cider vinegar for many years from scores of manufacturers. But it is suggested that because one manufacturer of waste vinegar is now defending such a seizure in the federal courts it would be premature to legislate on the subject in this state.

"This is not a mere trade controversy. It is a contest for honest labels and fair competition. It is primarily for

the purpose of permitting the public to know what it is buying and to enable the public to make intelligent selection. If waste vinegar is equal or superior to cider vinegar, the manufacturers of it have nothing to fear.

"It is not an effort to drive waste vinegar out of the market; it is an effort to compel it to sail under its own flag and win recognition, if it can, on his own merits.

"We do not attempt to say what that label shall be; it has the whole of the rest of the field of labels from which to make its choice. We only insist that it should no longer be sold under the label of what it is not—cider vinegar."

The text of the bill is as follows:

Section I.—Sections seventy and seventy-one of chapter nine of the laws of 1909, entitled "An Act in Relation to Agriculture, constituting chapter one of the consolidated laws," as amended by chapter one hundred and twenty-five of the laws of 1916, are hereby amended to read as follows: Definition of vinegars and adulterated vinegars. All vinegars made by fermentation without distillation must carry in solution the extractive matter derived from the substance from which they were fermented. The terms "cider vinegar," "apple vinegar" shall be construed to mean the product made exclusively from the pressed juice of apples by alcoholic and subsequent acetous fermentations, the acidity, solids and ash of which have been derived exclusively from the apples from which it was fermented. The product made from dried apples, apple skins, cores or chops, by the process of soaking, with subsequent alcoholic and acetous fermentations of the solutions thus obtained, is not entitled to be called "apple vinegar" or "cider vinegar" without further designation, but must be plainly marked to show the material from which it is produced. The dried stock from which such product is prepared must be clean and made from sound material. The term "sugar vinegar" shall be construed to mean the product made by the alcoholic and subsequent acetous fermentations of solutions of sugar, syrup, molasses or refiners' syrup. The term "malt vinegar" shall be construed to mean the product made by the alcoholic and subsequent acetous fermentation of an infusion of marley malt. The terms "wine vinegar," "grape vinegar" shall be construed to mean the product made by the alcoholic and subsequent acetous fermentation of the juice of grapes. The terms "glucose vinegar" shall be construed to mean the product made by the alcoholic and subsequent acetous fermentation of solutions of corn sugar or glucose. The terms "spirit vinegar," "distilled vinegar," "grain vinegar" shall be construed to mean the product made by the acetous fermentation of dilute distilled alcohol. All vinegars which contain any added drugs, acids, coloring matter or ingredients not derived exclusively from the substances from which they were respectively made, or which shall contain less than four grams of acetous acid in one hundred cubic centimeters of the vinegar at twenty degree centigrade, shall be deemed adulterated. Nothing herein shall be deemed to prohibit the manufacture of vinegar for consumption elsewhere than within this state of such acid content as may be elsewhere required. The product made by the destructive distillation of wood, known as pyroligneous acid, or acetic acid derived from other sources than fruit grain, vegetables, sugar or syrup shall not be sold, offered, exposed or had in possession for sale for food. Mixture of two or more vinegars herein defined are compounds, and the packages containing the same shall be plainly marked or branded with the word "compound," together with the proportions of the vinegars so mixed, in addition to the other requirements of section seventy-two of this article. Packages containing vinegars made from wine or fruits which have been reduced with water must be plainly marked or branded "reduced to——per centum acid strength," indicating the acidity to which they have been so reduced, or words equivalent thereto. Manufacture and sale of adulterated or imitation vinegar prohibited. No person, firm or corporation shall manufacture, sell, offer, expose or have in possession for sale in this state any vinegar defined herein not in compliance herewith. 1. Any adulterated vinegar. 2. Any vinegar



or product in imitation of cider or apple vinegar which is not cider or apple vinegar. 3. As for cider or apple vinegar any vinegar or product which is not cider or apple vinegar. 4. Any mixture of spirit vinegar, distilled vinegar, grain vinegar, glucose vinegar or other colorless or nearly colorless vinegars with sugar vinegar, cider vinegar, or other colored vinegars or with boiled cider or dilute molasses whereby the resultant compound is so colored as to be an imitation of cider or apple vinegar. This act shall take effect immediately.

### Illinois Bill Affects Sale and Making of Beverages

A bill pertaining to State license for venders of soda water and soft drinks, has been introduced into the Illinois Legislature, section 1 of which reads as follows:

"Be it enacted by the People of the State of Illinois, represented in the General Assembly: That no person, firm or corporation shall manufacture, mix or bottle, sell or offer for sale any carbonated or still beverages, soda water, fruit juices, fruitades, ciders or other soft drinks within this State without having first secured a license from the Department of Agriculture, as provided for in this Act. Any manufacturer without the State of Illinois who desires to sell his products within the State of Illinois, either directly or through dealers, shall by himself or through his dealer secure a license as otherwise provided for in this Act, before the goods shall enter the State."

The license fee is \$25 per year, but it is provided that for soda fountains where soda water and other soft drinks are sold mixed for immediate consumption of retail trade, the license fee shall be \$5.

Section 3 of the bill reads:

"For the purpose of this Act, all carbonated beverages, soda waters, and other soft drinks with the exception of table waters; natural or artificial mineral waters, plain, still or carbonated waters, and soft drinks known as cereal beverages, shall, in addition to flavoring materials, acidulents, coloring and other harmless ingredients not in conflict with the Food and Dairy Act in force July 1, 1917, contain a quantity of sugars, syrups or honey which will make the finished product equivalent in sweetness to the sweetness of a product containing not less than 8 per cent of sugar as defined in the tentative standards of the Illinois Food Standard Commission promulgated by it March 1, 1913."

Section 4 of the bill gives the Director of Agriculture power to revoke any license, either temporarily or permanently.

Retailers are not subject to tax who sell in the original packages, or in an unchanged form, the beverages of a manufacturer who has paid his license fee.

Section 8 of the bill states:

"No bottle shall be used by the manufacturer of carbonated or still beverages, soda waters, fruit juices, ciders, or other soft drinks in which the metal or rubber part of the stopper comes in contact with the beverage. The provisions of this section shall not apply to carbonated water put up in 'siphons' which are of a construction such as to make it impossible for harmful metals to be dissolved."

### Sales Tax Proposed in Tennessee

A bill introduced into the Legislature in Tennessee seeks to impose a sales tax of one-fourth of one per cent upon the retail sales price of any commodity. This tax must be paid by the retailer and would apply to sales of food, candy, soda water, and every other thing sold at retail.

### Rhode Island Bill Proposes Permits for Beverages

A bill has been introduced into the Rhode Island Legislature which seeks to amend section 15 of the Pure Food and Drug Law so as to read as follows:

"It shall be unlawful for any person, firm or corporation to manufacture or bottle for sale, or to sell or offer for sale any carbonated or non-alcoholic beverage, soda water, grape juice, mineral or spring water either plain or carbonated, or any other soft drink, so-called, without a permit from the board of food and drug commissioners. Said permit shall be known as a 'bottler's permit' and the person receiving said permit shall be known as the 'bottler.' Blank forms of application for permits shall be furnished by the board without cost. The fee for such permit shall be ten dollars and all permits shall expire on December 31 of the year in which they are issued. Application for renewal of permits must be made on or before the first day of January of each and every year. The fee received by said board for 'bottler's permits' shall be paid into the state treasury. All permits granted hereunder shall be posted in conspicuous place on the premises of the bottler so that they may readily be seen by any person inspecting the premises."

The above bill also provides:

"No bottles shall be used in which the metal or rubber part of the stopper comes in contact with the beverage. The provision of this section shall not apply to carbonated or vichy water put up in siphon bottles, or steel soda fountains, block tin lined."

The bill also contains a provision prohibiting the refilling of bottles, etc., the property of another bottler.

### Butter Bill to be Introduced in New York

Waging a fight to bring purer butter to the consumers of New York City, Mrs. Louis Reed Welzmilller, Deputy Commissioner of Markets, has in the process of construction a bill which will be introduced in the New York State Legislature.

At a recent luncheon of the Brooklyn Retail Grocers' Association, Mrs. Welzmilller said that the only pure butter used now in the city came from Denmark.

"Eighty-five per cent of the butter on the market today," she said, "is a neutralized cream. This neutralization of butter has been going on for many years and it was only during the early days of the war that the truth came out. It happened that the British Government received a large consignment of butter from this country and found upon analyses that it had been neutralized."

Mrs. Welzmilller's bill, which is to be introduced by State Senator John Boylan, will read in part:

"No person by himself, his agent or employees shall manufacture for sale, or expose for sale, butter that is a product of or is manufactured from cream that has had added to it a neutralizer for the purpose of or with the effect of neutralizing or destroying inferiority produced by decomposition or putrefaction, unless he shall plainly brand on the package in which this butter is put up: 'Butter Made from Neutralized Cream.'"

The smallest letters in which the brand can appear must be three-eighths of an inch square.

### Butter Bill in Pennsylvania

A bill has been reported from the committees in the Pennsylvania Senate and passed on first reading which forbid the sale of butter containing more than 16 per cent water.



### Other Food Bills Introduced

A bill is under consideration in the Illinois Legislature which makes it "unlawful for any corporation, society or association organized not for pecuniary profit to hold any meeting or an association of its members for the purpose of discussing or with the intention of discussing the means by which they may regulate or fix the price of any article of merchandise or commodity." Any corporation, society or association or its members guilty of violation of the above provision shall be fined not less than \$500 nor more than \$1500, and any member "assisting in or giving his consent to the holding of such meeting" may also be imprisoned not to exceed one year.

A bill in the Minnesota Legislature amends the prohibition law in several particulars. Under the provisions of this bill, standards for various flavoring extracts are fixed, but do not include imitation or synthetic extracts. A permit from the clerk or recorder or county auditor is required for all persons who wish to buy flavoring extracts to flavor food or drink, and flavoring extracts may only be sold by pharmacists.

A revenue bill in Tennessee imposes the following privilege taxes: 15 per cent upon the manufacturer's price of cereals, beverages and substitutes therefor, to be paid by the manufacturer; 10 per cent upon the manufacturer's price on unfermented grape juice, ginger ale, carbonated beverages, to be paid by the manufacturer, producer or importer; 2 cents per gallon on natural and mineral waters, to be paid by the producer, bottler or importer; 1 cent for each five cents or fraction thereof on sales of soda water, ice cream, etc., to be paid by the owner of fountain or ice cream parlor or other similar place; 15 per cent upon the manufacturer's price of candy to be paid by the manufacturer, producer or importer, or retailer; 15 per cent upon the price of chewing gum, to be paid by the manufacturer, producer, importer or retailer.

### New Milk Bill in New York State

A bill introduced into the New York Legislature by Senator Nathan Strauss, of New York City, would provide for complete supervision over the milk industry in that State, by a milk arbitration board of five members. This board would have the power to fix rates for both producers and distributors and to create zones in New York City within which one distributing concern or another would have exclusive trading rights. It would be empowered also to regulate the proportion of fluid milk which is to be sent into the market and the proportions that could be diverted to milk product industries in times of emergency. Besides the power to fix rates and regulate the traffic generally, the board would have sweeping powers of investigation to enable it to recommend or order more economical handling of milk.

### Two Food Bills Acted Upon in Ohio

Two food bills have been passed by the Ohio Senate, and now go to the House. The first, the Kryder ice cream standardization bill, was amended to reduce the butter fat requirement from 12 to 8 per cent. The other, the Brand bill, standardizes the weight of bread, fixing weights of loaves at 16 to 24 ounces or multiples of one pound, twelve hours after baking, and requires the purported weight to be printed on the wrapper or bread.

A bill providing for sanitary regulations for the manufacturing, transportation and sale of food was killed in the House in the Washington Legislature by indefinite postponement.

### Seek to Amend Tennessee Revenue Law

An amendment to the Tennessee revenue laws, of interest to brewers and jobbers of beverage or soft drinks, has been introduced in the Tennessee Legislature, which seeks to impose license taxes as follows:

Brewers manufacturing non-intoxicating beverage drinks, containing hops or cereals or products containing less than one-half of one percent alcohol, each per annum, \$300.

Wholesale jobbers of soft drinks, sold in bottles, including non-intoxicating beverage drinks, and wholesale agents of bottlers of said drinks, where same is the main or principal business of said wholesaler or agent, in counties of 60,000 inhabitants or over, each per annum, \$150; in counties of 40,000 to less than 60,000 inhabitants, each per annum, \$100; in counties of less than 40,000 inhabitants, each per annum, \$75; wholesale jobbers of soft drinks, where same is only a side line and not the main business, and who pay tax as wholesale merchants, in counties of 60,000 inhabitants or over, each per annum, \$100; in counties of less than 60,000 inhabitants, each per annum, \$50.

### Test Maryland Canning Law

The case of the State against John G. Grimm, a canned goods packer at Jarrettsville, Md., is considered of great importance to the packing industry of the State, and is the first case to come up in any Maryland court under the law passed by the General Assembly in 1920, relative to the packing of tomatoes with other contents than the juice of tomatoes.

Grimm pleaded guilty to the charge of having mixed water with his pack, and Judge Harlan in the Circuit Court at Belair, Md., suspended sentence, the court taking into consideration the fact that Grimm had suffered a loss of 3000 cases of tomatoes which the pure food officials had forbidden him to market.

### Texas Bill to Regulate Baking

The Legislature of the State of Texas is considering a bill to regulate and make sanitary, buildings and rooms used and occupied as a bakery, for the manufacture of bakery products; to provide for pure and wholesome ingredients of bakery products and the cleanliness of receptacles used in the handling. The bill prohibits the use of impure materials, fixes the weight of a loaf of bread, and fixes a penalty for the violation of any of its provisions.

### Tax Proposed in Pennsylvania on Brewed Liquors

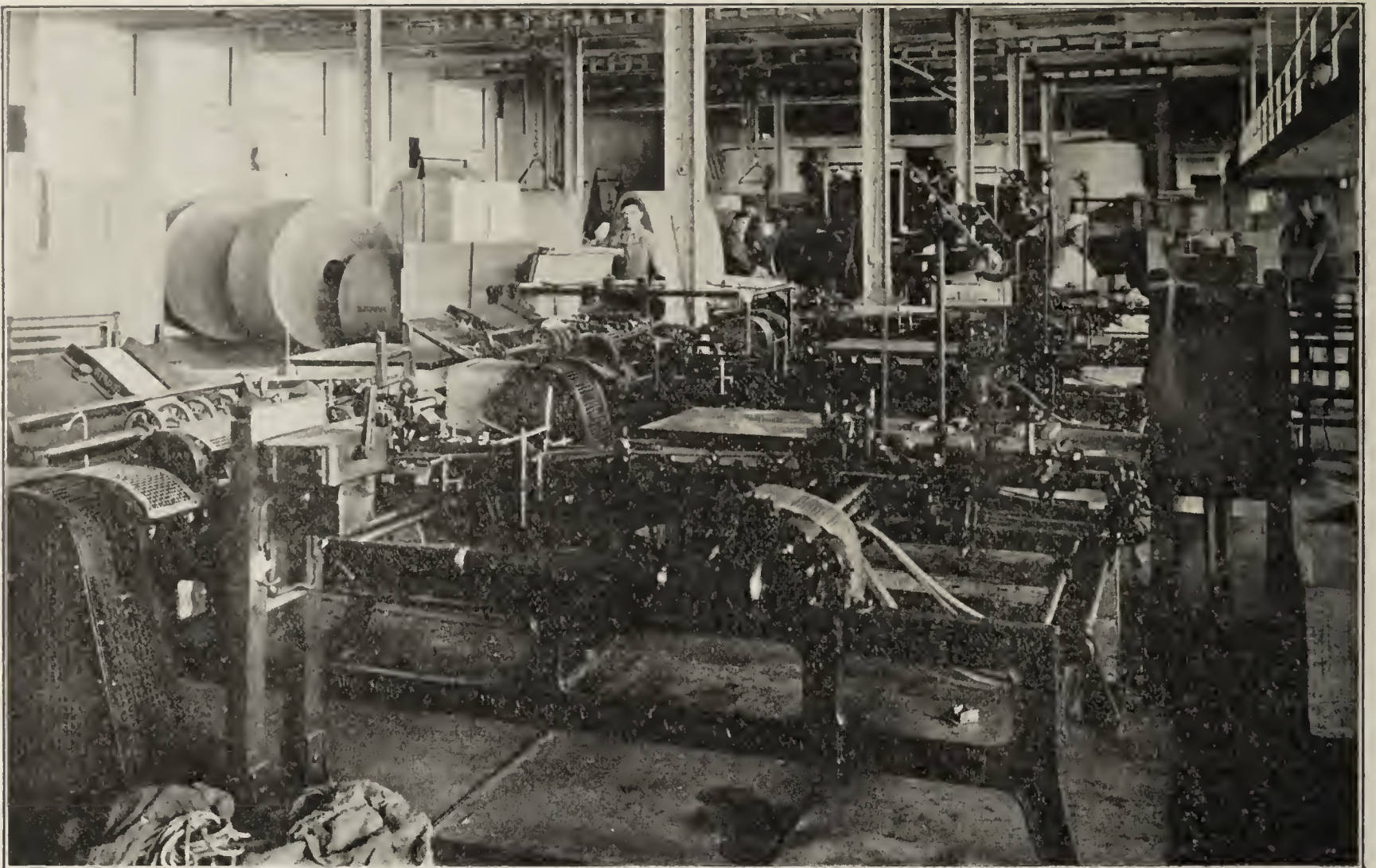
A bill introduced in the Pennsylvania Legislature extends the provisions of the Pennsylvania so-called "Brooks High License Law," so as to make it applicable to persons selling at retail "vinous, spirituous, malt or brewed liquors," "not containing a higher per centum of alcohol than that prescribed by the Constitution and Laws of the United States of America."

### New Labeling Bill in Michigan

Senator W. A. Lemire of Escanaba, is responsible for a bill introduced into the Michigan Senate, relating to misbranding. Under the bill, every article of food must have an accurate label showing its contents and the quantity, and any violation of this bill would be punishable under the provisions of the pure food statutes, of which it would be a part if passed by the Legislature.



# MACHINERY AND EQUIPMENT



These Staude machines have been installed in the plant of the Shredded Wheat Co., Niagara Falls, N. Y.

## Staude Automatic Folding Box Gluing Machine

The growth of the demand for package food products has been so great that some food manufacturers have been led to put in considerable of their own equipment for making and printing cartons. One of these is the Shredded Wheat Co., Niagara Falls, N. Y.; others are the Quaker Oats Co., American Sugar Refining Co., Church & Dwight, Minute Tapioca Co., and the Frank Tea & Spice Company.

For gluing boxes, such as are used for foods, drugs, etc., an automatic folding box gluing machine has been devised by the E. G. Staude Manufacturing Company, 2675 University Avenue, St. Paul, Minn., and this machine is in successful use in the plants of the companies above mentioned.

The Staude machine performs a number of operations, eliminating waste, it is claimed, and speeding up production to a high degree. It takes the paper stock, feeding the cartons one at a time in a continuous stream, places the adhesive on the glue flap, folds, seals, counts and stacks. The folded cartons are stacked in vertical piles, ready to be removed for filling.

Production on the Staude machine, the manufacturer states, runs from 200,000 to 250,000 per day. Greater production can be obtained on the smaller cartons, while naturally production slows up a bit on those of large size.

A feature of the Staude machine is its ability to handle odd-shaped and special cartons. It handles any grade of stock made up either in square-end or tuck-in style. The



Automatic folding box gluing machine, which handles from 200,000 to 250,000 boxes per day

machine can be operated by two persons, one to tend the feeder and one to tend the stacker.

Accompanying illustrations show the machines at work in the plant of the Shredded Wheat Co.

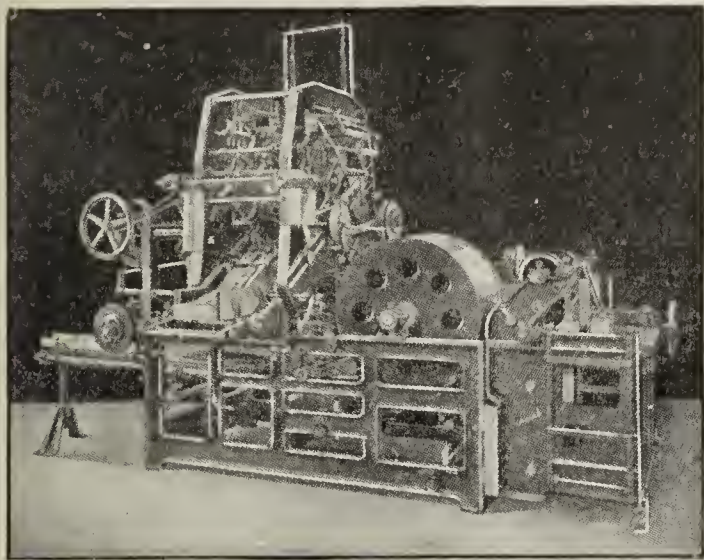


## A Weevil-Proof Package For Cereal Products

One of the greatest problems facing the manufacturer and packer of cereals is the producing of a package which will be at once weevil-proof and practically air-tight.

Manufacturers of breakfast foods and other cereals have found, even after taking the greatest pains in the sterilization of their products, before packing, and carefully lining and sealing the package itself, that great losses are sustained through the return of goods which have become infested with weevils. So important is this problem that the United States Department of Agriculture has spent thousands of dollars investigating various types of packages in an effort to find one which would be actually weevil-proof.

It has been found that perfectly sterile products may



Machine Designed For Shrinking on of "Pneutite" Wrapper at the Rate of 30 a Minute

become infested by weevils through being placed in contact with, or in close proximity to, other packages so infested, the weevil getting into the package through the apertures usually found at the corners of the package.

The experience of the United States Department of Agriculture has shown that the only weevil-proof package is one in which every seam and fold is thoroughly and positively sealed by a shrunk-on wrapper.

The Pneumatic Scale Corporation, Ltd., Norfolk Downs, Mass., has brought out a new package which can be handled on its standard sealing and filling machines, which, it is claimed, automatically accomplishes all of the many requirements of an absolutely weevil-proof package, including the application of the shrunk-on wrapper, above mentioned.

The shell itself is manufactured of the cheaper grades of chipboard, the wrapper being printed on an ordinary and inexpensive grade of paper, the combined cost of the plain shell and the printed wrapper being no more, and sometimes less, than the cost of the ordinary printed or lithographed carton, which is sealed at the ends, but unwrapped.

The standard equipment manufactured by the Pneumatic Scale Corporation, Ltd., is used in the filling and sealing of the inner shell; in fact, the inner shell is just the same as the standard carton, minus the printing. After the material has been weighed, and the carton sealed, it is carried to the tight wrapping machine, which shrinks on a wrapper, thoroughly sealing every seam and joint.

The top of the shell is so made that the use of a blunt knife along the dotted line reveals a hinged cover, through which a spoon may be inserted to remove the contents, or through which the contents may be easily and accurately poured.

The manufacturer states that this package combines all of the essentials necessary in a satisfactory package for cereals and other materials requiring practically air-tight and weevil-proof protection. The economical features of the package are also emphasized. It packs closely in the shipping container, thus saving about 20 per cent of outward shipping and storage expense for the manufacturer, jobber and retailer.

The accompanying illustration shows the machine designed for the shrinking on of the "Pneutite" wrapper at the rate of 30 packages a minute.

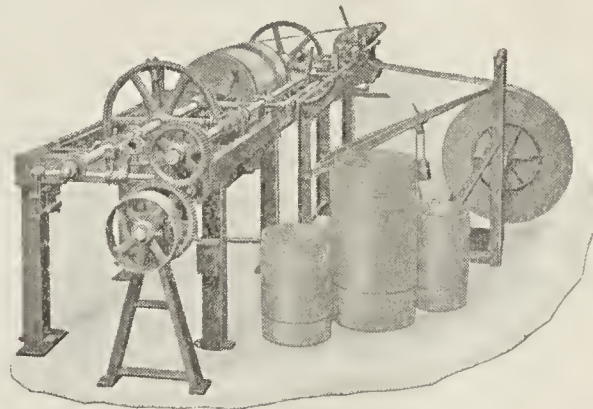
After the application of the wrapper, the package immediately passes into a dryer, fitted with revolving shelves, through which a continuous stream of dry, warm air is drawn, which gradually and thoroughly dries the wrapper, which, in drying, shrinks and adheres to every contacting surface, removing all wrinkles and rendering the package insect-proof and practically air-tight.

## Machine For Manufacturing Paper Barrels

The Snyderfiba Corporation, 171 Madison Avenue, New York City, has designed a machine for the manufacture of paper drums and barrels of all dimensions, from 10 inches to 19 $\frac{1}{8}$  inches in diameter, and all lengths up to 30 inches.

It is said that the packages produced by this machine are absolutely uniform in size, shape, cubical contents and appearance. They are tight, sift-proof and vermin-proof, and can be made a distinctive color, and heavy or light, according to the load intended. The manufacturers claim for them that once coopered and stored in a warehouse, they will not shrink and require recoopering before shipping out. They require no inside paper lining, are smooth and clean, without splinters to get into the food, it is stated.

The material used in the manufacture of the shells of



Machine For Manufacture of Paper Barrels

the barrels, corresponding to the staves of an ordinary wooden barrel, is common chip board paper, which is made of waste paper, and silicate of soda, otherwise known as liquid glass, which is the adhesive used in gluing together the laminations of the shell of the barrel.

Other necessary materials are the adhesive and heading, which may be either a solid pressed steel head, or the regular wooden head with an arrangement of two inside steel hoops, holding the head at either end of the barrel, and two outside steel hoops, overlapping the inside hoop at the tine of the barrel, and protecting the outside at the ends, nails being driven through both hoops into the head. In the case of the pressed steel head, it is merely crimped on.

In attempting to show the adaptability of this machine, the manufacturers state that the proposition to manufacture a particular barrel requires simply the leasing of a machine, which will produce an average of about 400 barrels a day, the operation of which is so simple that it does not require a skilled mechanic.



## BOOK REVIEWS

### The World's Food Resources

#### J. Russell Smith's Latest Book Contains Note of Warning and Assurance

In his latest book, "The World's Food Resources" (Henry Holt & Company), J. Russell Smith, professor of economic geography at Columbia University, sounds both a note of warning and of assurance to the hungry world. He puts himself, and the world at large, a question, and then proceeds to answer it from the wide range of his information. For he says in his introduction, "The war has made us think about food—a little."

It is in his introduction that he asks and answers his questions, but he places conclusive proof in the body of the book.

"Has food shortage come to stay," Professor Smith inquires, "or is there a bounteous future ahead of us? The answer to that question depends on how man behaves. The injunction of Jehova to Adam and Eve in the Garden of Eden still holds good. The earth is still a potential Eden with room (food possibilities) for many, many more of the children of men. We have subdued the earth far more extensively than Adam dreamed of doing. It is more completely ours than Eden was Adam's. Now, as then, man's greatest enemy is himself. Food we can have in great abundance if we devote our time to the continued conquest of the earth, and to the utilization of nature rather than to the conquest of each other. But there can be only death and starvation for millions of men if we continue to indulge in war. Nations are no longer independent. We have become dependent on a great fabric of trade; when it is destroyed, we die."

It is obviously the war which has prompted Professor Smith to prompt others to think as he has. "Where does the world's food come from?" he asks, and then proceeds to give a little outline of the tremendous sources of an American breakfast alone.

#### Worldwide Sources of Modern Breakfast

"The man of today starts his breakfast with an orange from California, or Florida, or a banana from Central America, or an apple from Oregon, Virginia or New York. He takes a shredded wheat biscuit made in Niagara Falls from Dakota wheat. He sugars it with the extract of Cuban cane. He puts Wisconsin butter on bread baked of Minneapolis wheat flour mixed with Illinois corn flour. He has a potato. In June it comes from Virginia, in July from New Jersey, in November from New York, Maine or Michigan. If he indulges in meat, it is a lamb chop from a frisky little beast born on the high plains near the Rocky Mountains, and fattened in an Illinois feed lot before going up to Chicago to be inspected, slaughtered and refrigerated. He warms and wakes himself up with a cup of coffee from Brazil (called Mocha perhaps), or tea from Ceylon or Japan, or cocoa from Ecuador or the coast of Guinea."

"So much for the breakfast of today. Our other meals are equally far reaching, and our clothing also is a collection of stuffs from the far ends of the world."

"This development of *dependence* had gone so far before the war that England produced but a fifth of the food she ate, Italy two-thirds, and Germany four-fifths."

And later—

"Massachusetts spreads the butter of Wisconsin on the

bread of Dakota, eats the meat of Kansas, and feeds the horse born in Iowa with the corn of Illinois. She would starve more quickly, far more quickly, than Belgium; so would New York, so would eastern Pennsylvania and New Jersey, but for the supplies that continuously roll in from the West."

Professor Smith indicates this as a tremendously vulnerable point in the national armor, noting that part of the reported German plan for the conquest of the United States, included a bisection of the country along the natural line made by the Potomac River, the Blue Ridge Mountains, the Susquehanna and Hudson Rivers with the addition of Lake George and Lake Champlain.

Events that we have known in terms of money, men and ammunition are seen by Professor Smith in the light of a food supply that held out or failed. Vast droughts in Central Asia are said to have caused the fall of Rome. The overthrow of the Russian Czar hinged upon a bread-line, the downfall of Kerensky is traced to an army breakfast that failed to materialize.

#### Food Supply Mankind's First Necessity

He concludes his introduction, which to the layman will be one of the most instructive portions of the volume, with—

"The food supply is the first necessity of mankind; and a satisfactory food supply is a necessity of advancing civilization; for, as President Wilson recently put it, 'Hunger does not breed reform.'"

It is an enormous task that Professor Smith has set himself, this tabulation of the world's food supply, but he has included practically everything in the world's production of edibles, with a good deal of consideration for their importance.

His first three chapters, devoted to wheat, will give a good idea of the present wheat situation, and concerning the future, he says what he eventually makes the theme of the book—

"Taken altogether, the undeveloped lands of the present wheat regions, the possible regions of the new wheat growing, the new varieties, the new fertilizers, the new knowledge, and the farm tractor, seem to promise that a wheat supply is within our reach for many, many decades if we can but devote our powers to the conquest of nature rather than to the destruction of man."

A good deal of space is given over to the cereals with rice and corn in particular detail. Both of these foods are shown to be of tremendous importance, the latter being called the king of crops, and one of the vital foods of the Occident, while the former is indicated to be the staff of life of the Orient.

#### Potato Possibilities Undeveloped

One of the interesting points brought out in the chapter on potatoes is the fact that the United States has not developed the possibilities of potato production, in comparison with Europe, and one of the reasons for this is that the Americans do not have to eat potatoes—much, because of the quantity and cheapness of their corn.

If the reader is looking for any note of alarm, he will find something of that nature, though in the author's words: "By no means so great a calamity as people think" in the chapter headed, "Meat, men and land." There he will find—

"Perhaps some reader of this book, seeing statements of the great and in some cases almost indefinite possibilities of increase in breadstuffs and bread-substitutes, has come to the conclusion that the author is an incorrigible optimist, touched perhaps with unreason. Let him take comfort in the statement that meat will become more and more scarce. Furthermore, it will become more scarce as



the production of these other foods increases. We cannot have both indefinite increase of bread and indefinite increase of meat from land animals."

A good idea of the world's food resources may be gained by a cursory inspection of some of Professor Smith's page headings. Among those which have an interesting story to tell are, "The Wonderful Coconut Palm," "The Olive and the Cow," "The Responsible Egg," "The Great Promise of the Peanut," "Fish a Little Used Supply," "The Whale as Food," "Oyster Farming," "The Range Cattle of the Sea."

Due prominence is given to the wonderful soy bean whose possibilities in the food substitution line are only beginning to be discovered, besides being one of the "pulse" plants which are so valued as fertilizer because of their extremely high nitrogenous content.

In his final chapters, Professor Smith points out that with the exception of meat, our resources for food are practically unlimited—depending only upon our power to take advantage of them. Science, unused land, the sea, fertilizers, power on the farms, will eventually be combined by man to yield him a sufficient living.

To the thinking and observing reader, "The World's Food Resources" will be one of the most powerful arguments against future wars yet advanced. For the keynote of the volume is that none of these eventual loopholes through which future generations may slip to avoid starvation, will be available unless man sets himself to intensive cultivation immediately, and sets aside all thoughts of further dominion or conquest. The way to a sufficient and lasting food supply is made sufficiently clear. The necessity for instant action, and the avoidance of damaging distractions such as wholesale manslaughter, is made clearer still. And finally, as a furthering of this to secure an adequate food supply for the coming generations, the world must unite in trade.

"We have some chance of keeping the lust of dominion under control if it does not form an alliance with land hunger. To prevent this union, we must weaken land hunger by establishing freedom of trade. By this means we may succeed in forming a world organization that can keep in check the two great national appetites: the lust for power and the lust for land." P. W. G.

### Coloring Materials in Food

The Industrial Research Laboratories, 190 North State Street, Chicago, in a bulletin, give some data on coloring materials as related to food, by Perry C. Thompson. Mr. Thompson says:

"The question will generally resolve itself into deciding whether the color is poisonous or harmless and, if the latter, whether the poison is in sufficient quantity to injure the consumer's health. The poisonous coloring matters are those containing lead, copper, arsenic, chromium and zinc, all of mineral origin, together with a few injurious organic coloring substances such as gamboge and picric acid. The non-poisonous coloring matters are the various aniline colors (so long as they are pure and contain no arsenic), saffron, tumeric, annato, chlorophyll, and generally, with some exceptions, all organic colors obtained from the vegetable kingdom.

"Owing to the efficiency of the pure food laws, however, poisonous coloring substances, with the exception of lead and copper salts in small quantities, are rarely met with in food, and even in confectionery. One ounce of auramine, for instance, has been found sufficient to give a deep yellow color to 2,000 pounds of confectionery, so that an infinitesimal amount of the actual dyestuff is taken into the system. Therefore little danger need be apprehended from the use of coal tar colors in food."

### Found News Agency For Scientific Articles

"Science Service," an organization for the purpose of familiarizing the general reading public with the progress of scientific research, was recently established in Washington, D. C. The new organization has been substantially endowed, and is chartered as a non-profit-making corporation. Control is vested in a board of trustees, composed of ten scientists and five journalists. The National Academy of Sciences, the American Association for the Advancement of Science, and the National Research Council each elects three trustees.

Edwin E. Slosson, for twelve years professor of chemistry at the University of Wyoming, for seventeen years literary editor of *The Independent*, and author of "Creative Chemistry," "Easy Lessons in Einstein," and other popular science works, is to be the editor of "Science Service." The manager is to be Howard Wheeler, formerly editor of the *San Francisco Daily News*, Pacific Coast Manager of the Newspaper Enterprise Association, managing editor of *Harper's Weekly*, and for five years editor of *Everybody's Magazine*.

The personnel of the first board of trustees is announced as follows:

A. A. Noyes, Director of Chemical Research, California Institute of Technology, Pasadena.

R. A. Millikan, Professor of Physics, University of Chicago.

John C. Merriam, President of the Carnegie Institution of Washington.

D. T. MacDougal, Director of the Desert Laboratory of the Carnegie Institution of Washington, Tucson, Arizona.

George I. Moore, Director of the Missouri Botanical Gardens, St. Louis.

J. McKeen Cattell, Editor of *Science*, Garrison, N. Y.

George E. Hale, Director of the Mount Wilson Observatory, Pasadena, California.

Vernon Kellogg, Secretary of the National Research Council, Washington.

R. M. Yerkes, Chairman of the Research Information Service, National Research Council, Washington.

E. W. Scripps, Miramar, California.

R. P. Scripps, Cleveland, Ohio.

W. E. Ritter, Director of the Scripps Institution for Biological Research of the University of California, La Jolla, California.

William Allen White, Editor of the *Emporia Gazette*, Emporia, Kan.

Chester H. Rowell, Berkeley, California.

Edwin F. Gay, Editor of the *New York Evening Post*.

### Soy-Bean Oil May Prove an Industry

Figures on the importation of soy-bean oil, particularly from the Orient, indicate the possibility of a future industry in this country, in the opinion of specialists in the United States Department of Agriculture. So far as the census statistics show, no soy-bean oil was manufactured in this country in 1919 or 1920, although several Western oil mills and Southern cotton-oil mills crushed both imported and domestic grown beans for oil in earlier years. At the same time the importation of oil for the year ending June 30, 1920, amounted to 195,773,594 pounds, valued at \$25,233,590. The importations of soy-bean oil cake for the same period amounted to 16,273,785 pounds, valued at \$408,895. Beans were imported to the amount of 4,022,552 pounds, valued at \$213,696. The absence of a soy-bean crushing industry in this country is ascribed by experts to the rapid increase in acreage, which uses practically all the beans for seeding, and to a large per cent of acreage utilized for pasturage, silage, and forage.



# NEWS OF THE FOOD TRADES

## Charge of Monopoly Against Wholesaler

Austin, Nichols & Company  
Cited by Federal Trade  
Commission

Upon application for the issuance of complaint, the Federal Trade Commission has, as required by law, cited Austin, Nichols & Co., Inc., a Virginia corporation engaged in the wholesale grocery business with headquarters at Richmond, in complaint under the Clayton law.

The citation is under Section 7 of that act which seeks to prevent firms from acquiring its competitors where the effect of the acquisition lessens competition.

The acquisition and consolidation of competing businesses in the organization of this respondent are set out in the complaint as follows:

"In 1919, a long established firm, Austin, Nichols & Co., Inc., a New York corporation with headquarters at New York City, was one of the largest wholesale grocery houses in the United States.

"At this time Wilson & Co., Chicago packers, controlled Fame Canning Company, operating eight plants for vegetable and canning in the states of Indiana, Michigan and Wisconsin, the Wilson Fisheries Company operating five fish canning plants in Washington and Alaska, and also controlled a vegetable canning plant at Whiteland, Indiana.

"Anticipating the decree in the government suit enjoining packers from engaging in unrelated lines of business, Wilson & Co., entered into an agreement with a principal stock holder representing all the stock holders of the Austin, Nichols & Co., Inc., the New York Company, by the terms of which agreement it was provided that the properties of the Austin, Nichols & Co., of New York, the Fame Canning Company, the Wilson Fisheries Co., and the Whiteland Indiana Vegetable Canning Plant would be consolidated and operated through a new corporation to be organized pursuant to the agreement.

"The new corporation, Austin, Nichols & Co., Inc., of Richmond, Virginia, the respondent herein, was organized, August 23, 1919, and took over the control of Austin, Nichols & Co., Inc., of New York City, the Fame Canning Co., the Wilson Fisheries Co and the Whiteland Indiana Vegetable Canning plant.

"The complaint avers that prior to the consolidation these companies were competing in the sale of canned vegetables and canned fish and did a business in 1919 of approximately thirty-eight million dollars, which constituted a substantial proportion of the wholesale trade in these commodities in a majority of the states. The acquisition by the new corporation of these com-

peting units, the complaint avers, effected an elimination of all existing competition between these several companies and that since the organization of the new company in August, 1919, the public has not enjoyed the benefit of this competition."

Thirty days are allowed for filing answers to this citation, after which time the case will be heard on its merits on May 5, or as soon thereafter as it may be reached on the calendar.

## Pendulum Swings Far in Sugar Prices

The longest swing that the pendulum of sugar prices ever took was that through which it passed last year, according to the 1920 annual report of the American Sugar Refining Company, when raw sugar ranged from 4 5-8 cents per pound to 24 1-2, and refined from 7 1-2 to 27 1-2.

"How violent were the fluctuations in raw sugar prices in 1920," says the report, "will be understood when it is stated that an investigation of the prices of over one hundred years, including the years of the Mexican and Civil Wars, fails to reveal a change in any one year one half so great as the fluctuation of 19.875 cents per pound last year.

"Even in 1914, the year of the sudden outbreak of the Great War, the fluctuation was only 3.625 cents, while from 1900 to 1910 the greatest fluctuation was in the year 1905 and that with only a variation of 1.85 cents per pound—less than one-tenth of the fluctuation of the de-control year of 1920."

The report adds that last year "the people of the United States paid the highest prices ever recorded, amounting to many unnecessary hundred millions of dollars in the attempted de-control by our Government of a world staple, for two years held below its world's parity without the caution of accumulating stocks or of any other preparatory measure for the transition."

## Prune Industry on Increase in California

California produces an annual prune crop of 225,000,000 pounds according to a recent report of the San Francisco Chamber of Commerce, with regard to the California prune industry. The State grows 85 per cent of all the prunes eaten in the United States and exports hundreds of thousands of pounds, some of which go back to the very fruit growing districts of France from where the original plantings were brought.

The bearing acreage of the prune land in California is valued at more than \$200,000,000, and it is estimated that 15,000 acres of new prunes are planted every year.

### Maple Sugar Holdings Large

About 318-600 lbs. of Maple sugar and 148,600 gallons of sirup were held by producers and local dealers in the producing sections on February 15.

## Wholesale Grocers' Sales Decrease

Average Net Sales in January,  
1921, About 30 Per Cent  
of Year Ago

The average net sales in the wholesale grocery business in January, 1921, were about 30 per cent. less than in January, 1920, according to a report of the Harvard Bureau of Business Research. The cost of doing business, however, did not decrease in like proportion.

An investigation was started by the bureau when the National Wholesale Grocers' Association suggested that a statement of existing conditions in the trade would prove of value to its members. Accordingly 307 questionnaires were sent out, of which sixty-four were replied to. The reports stated numerous wholesale grocers showed smaller expenses in dollars and cents in January, 1921, than in the previous year and there were approximately as many others who showed higher expenses despite the decline in sales.

"When expenses were shown in percentage of net sales," says the report, a higher ratio of expense in January of this year than in January, 1920. In percentage of net sale the sales force expenses in January, 1921, averaged about 0.7 per cent higher than in 1920; total shipping and receiving expenses were about 0.4 per cent. higher; total buying and management expenses about 3 per cent higher in January, 1921, than in January, 1920.

"The amount of merchandise purchased was smaller in every case in January, 1921, than in January, 1920. The purchases fell off more than the sales."

### Where Our Imported Eggs Come From

The United States imported 1,708,701 doz. eggs, valued at \$617,909, during the year 1920. China was the chief source of supply, 846,863 doz. coming from there. Canada furnished 276,392 doz.; Hongkong, 269,567 doz.; Australia, 209,718 doz.; Japan, 84,755 doz.; and Argentine, 21,000 doz.

During the same year the United States imported 29,022,577 lbs. of dried and frozen eggs, valued at \$7,233,614. China furnished 25,646,791 lbs. of this product. England sent us 2,378,752 lbs.; Norway, 340,000 lbs.; Canada, 311,052 lbs.; and Japan, 131,475 lbs.

### England Chief Market for American Peanut Oil During 1920

The United States exported 1,425,225 lbs. of peanut oil during the calendar year 1920. England furnished the chief market, having purchased 564,424 lbs. France purchased 433,688 lbs.; Norway, 202,958 lbs.; Sweden, 96,407 lbs.; Canada, 75,489 lbs.; Cuba, 15,094 lbs.; and Columbia, 10,010 lbs. The remaining 27,155 lbs. were sent in small lots to countries all over the world.



# World's Butter Trade Half of Pre-War Times

## International Movement Shows Marked Decrease Since 1913

The year 1913 was the last normal year in the world's production and consumption of dairy products. During that year the imports and exports of dairy products reached their highest point. By 1919, however, the butter situation had undergone changes so marked as to make exporting countries out of nations which before had been recorded on the importing side of the ledger.

The most significant change, perhaps, is shown by the fact that the total quantity of importations for consumption by 21 countries of the world fell off by more than one-half.

Such a decrease in the volume of international trade in butter is in striking contrast to the spectacular shift in the butter trade of the United States from a slight excess of exports in 1919, ready well established in the Virginia from a slight excess of imports in 1913 to an excess of exports in 1919,

### Consumption Falls Off

While the effective demand of the importing countries decreased, the quantities available from the exporting countries decreased also. This decrease in the exportable surplus, however, was not proportionately so great as the decrease in imports. This would indicate lower consumption of butter in these countries than in 1913.

There was also an important shifting of the trade from one country to another. For instance, the United Kingdom imported the greatest amount for consumption, 451,000,000 lbs. in 1913. In 1919 that country took only 174,000,000 lbs., a decrease of 62 1-2 per cent.

The greatest butter exporting country was Denmark, with an excess of exports for 1913 of 194,000,000 lbs., whereas in 1919 the net exports amounted to only 80,000,000 lbs., a decrease of nearly 59 per cent. Sweden, Italy and France changed completely from exporting to importing countries, while the exports from the Netherlands were greatly reduced.

The total butter imports of European countries for consumption during 1913 amounted to 475,514,216 lbs. The equivalent of 23 per cent of this amount was furnished by countries outside of Europe, while 77 per cent came from the European countries. In 1919 only 50 per cent of the European imports for consumption was furnished by European countries.

The shortage of feed, which existed during the war, was in 1919 still a serious handicap to dairying in the Scandinavian countries, Switzerland, and the Netherlands. Russia, which in 1913 had an excess of exports of 168,621,000 lbs. of butter was in 1919 virtually out of the trade.

Meanwhile, the dairy countries in the Southern Hemisphere were profiting by the opportunity to increase their dairy industry. The exports from Argentina and New Zealand were increased. The imports into British South Africa decreased 97 per cent, practically removing that country from international trade in butter. Australia, which appears to be the only exporting country

in the Southern Hemisphere that does not show increased exports, had a severe drought which extended into the year 1919.

The United States was receiving prior to the war a small excess importation of butter, whereas not only during the war but through to the end of 1919, this country continued to export more than was imported. Whether or not dairying was generally profitable in the United States throughout the war period, the foreign demand did much to help this industry by maintaining the price level for dairy products. The Bureau of Crop Estimates reports the number of milk cows on farms Jan. 1, 1921, as 23,321,000 and on Jan. 1, 1920, 23,619,000, as compared with the average of 20,804,000 for the 5-year period, 1911-1915.

During the entire year 1920 the food control requirements remained in force in the United Kingdom, allowing a ration of 1 to 11-2 ounces of butter a week for each person. In 1913 the United Kingdom took 68 per cent of the total net world exports of butter. In 1920 the gross imports were 192,230,528 lbs., whereas in 1913 it received 463,571,136 lbs. The total quantity of butter imported for 1920 when compared with 1919 shows an increase of 17,487,680 lbs.

### Denmark's Exports Increase

Denmark, Netherlands, and France each exported to the United Kingdom in 1920 greater quantities of butter than in 1919, which indicates that these countries are beginning to return to their prewar exports. The total export of butter from Denmark for 1920 is semi-officially given as 166,570,000 lbs., whereas in prewar times the annual export was 200,000,000 lbs. That this quantity of butter was made available for export only by reduction of home consumption is shown by a comparison with semi-official statistics of production. Prior to the war Denmark produced annually about 230,000,000 lbs. of factory butter, of which approximately 87 per cent was exported, leaving about 30,000,000 lbs. for home consumption. The 1920 butter production in Denmark was but 187,000,000 lbs., leaving only about 21,000,000 lbs. for home consumption.

That the United States has changed from a butter exporting country back to a butter importing country is shown by a comparison of the total exports of 17,487,735 lbs. for the year 1920 with the total imports of 37,454,172 lbs. The quantities imported have been increasing month by month. The production has already begun to reflect the lessening of the stimulus of foreign demand. In the first nine months of the year of creamery butter in the United States 1920 the United States produced 664,000,000 lbs., while in 1919 for the corresponding period the quantity was 699,000,000 lbs., showing a decrease of 35,000,000 lbs., or 5 per cent, in the butter production for the nine months.

The anticipated increase in butter production in the United States for the last three months of 1920, due to a re-

ported widespread conversion of condenseries into butter factories, had not at the end of the year materially affected receipts on the principal markets. Some of this butter may have found direct sale locally to chain stores and other large buyers. Notwithstanding the fact that butter prices in the United States were maintained at a level high enough to attract the butter of other countries during 1920, the price of butter did not maintain so high a position relatively as the prices of other articles of food. The holdings of butter in the United States for the week ending Jan. 1, 1921, were 37,902,983 lbs. For the same period last year the amount was 39,185,430 lbs. The difference in these quantities is negligible so far as the general market situation is concerned.

### Foreign Exchange Important Factor

The depreciation of foreign currencies not only affected our butter trade directly, but affected our entire dairy industry indirectly. Imports into countries with low exchange rates are discouraged or made prohibitive, while on the other hand exports are stimulated.

The advantage in export trade accruing to countries having a depreciated currency is well illustrated as follows:

After paying the tariff of 2½ cents per lb., the Danish export association would receive 10.41 cents more for butter delivered in the United States than for the same butter sold on the home markets. The quoted freight rate on butter from Denmark to New York City is approximately the same as the freight rate on butter from Minneapolis to New York City.

With ocean shipping as light as it now is from east to west, even the quoted rates are not maintained uniformly. Anyone having shipments from Europe to the United States may receive concessions from competing companies which prefer accepting a low rate to having no cargo at all. Within the United States the increased cost of transportation which went into effect in the summer of 1920 and amounted to 33 1-3 per cent had the effect of increasing the disadvantage due to exchange. Denmark has thus been able, on account of her low exchange to sell butter on the markets of the United States with an average advantage of more than 10 cents per lb.

At the close of 1920 the currencies of the principal countries of Europe and also of Argentina were depressed steadily, making a wider and wider difference of exchange and thereby increasing the advantages of exporting from those countries to the United States. The United Kingdom and Denmark are exceptions in that at the end of the year their exchange rates showed a slight upward tendency. The contracts of the United Kingdom with the dominions of Australia and New Zealand expire March 31, 1921.

W. H. Paulhams, president Puyallup & Sumner Fruit Growers Canning Co., Puyallup, Wash., has been appointed the third member of the Tacoma committee of the Foreign Trade Financing Corporation. He will represent the agricultural group of that district.



## Oil Extraction on Increase in Argentina

An increase in vegetable seed oil extraction in Argentina is announced by Trade Commissioner Philip S. Smith. Although cotton seed is not yet abundant, it is expected that the supply will be materially augmented each year from now on as a result of increased acreage planted to cotton in the territory of El Chaco. One new mill especially adapted for the production of cottonseed oil is being put up this year. Peanut oil is growing in importance, both it and cottonseed oil being employed locally to replace in part the imports of edible oils from Europe and the United States.

Corn oil is made by two companies, although the output as yet is insignificant with relation to the world's product. Experiments have been made with olive growing, and oil has been obtained from the native fruit, but development along this line does not promise to become rapid.

In general, the oil extracting plants are quite well equipped with machinery, although in some the seed-grinding apparatus could be improved. Any effort toward reaching these industrial establishments for the purpose of selling machinery should preferably be made through a resident representative.

## Imported Foodstuffs Show Declines in Price

A decline is indicated in the price of foodstuffs in the natural or partly manufactured state. Rice, of which the average import price last June was 10.3 cents per lb., averaged 4.8 cents per lb. in the January, 1921, imports; cacao, 8.6 cents per lb. against 17.2 cents in May last; coffee, 10 cents per lb. in January, 1921, against 22.3 cents in February, 1920; beans per bu., \$2.58, against \$4.50 in March of last year; onions, 98 cents per bu. against \$2.31 in May; potatoes, 82.7 cents per bu., against \$3.02 in June; tea, 19.1 cents per lb., against 34 cents in July, 1920, and raw sugar 6.10 cents per lb. in January, 1921, against an average of 16.10 cents per lb. in June, 1920.

## To Make Food Plant Improvements

Extensive plant additions and improvements are announced by the Oscar Dowling Food Products Inc., at New Orleans. These include equipment for grinding mustard, sanitary and automatic equipment for bottling and labeling pickles, olives, mustard, salad dressing and vinegar. A full line of sanitary equipment for making jelly, preserves and jams is being installed. It is intended to make the New Orleans plant one of the most up-to-date in the South. Dr. Dowling, president of the company, is also president of the Louisiana State Board of Health.

## Michigan Company Expands

The Michigan Canned Food Company, incorporated last fall for the purpose of building and operating several canning factories in Michigan, has increased its capital to \$1,000,000. Seven canning factories are to be built this year by the company, to be in operation in 1922, and it is understood that four locations have already been selected with three other towns still under consideration. It is also planned to have a warehouse in Detroit.

## Increase Selling Staff

Seggerman Bros., New York, announce a number of additions to their staff. George Power, formerly with U. H. Dudley & Co., New York City and more recently in charge of Butler & Sergeant's Cleveland office, and Harry Michener, formerly with Austin, Nichols & Company, have joined the selling staff in the canned foods department.

R. C. Rhodes, manager of this department, announces that Seggerman Bros. have been made the exclusive selling representatives in greater New York of the Big Four Canning Co., Stanley, Wis., packers of peas and kraut, and of the Fredonia Preserving Co.,

## Quebec's 1920 Dairy Output

Preliminary statistics just issued by the Provincial Bureau of Statistics, Quebec, Canada, indicate a normal balance compared to 1919. There were 1,813 butter and cheese factories in operation in Quebec Province in 1920, as compared with 1,867 in 1919. The output for the past two years was 37,681,306 lbs. in 1919 compared to 40,037,692 lbs. in 1920, and 58,044,719 lbs. of cheese in 1919 compared to 52,441,504 lbs. in 1920.

## January Exports of Honey

The United States exported 207,654 lbs. of honey valued at \$29,641 during January, 1921, as compared with 282,016 lbs. valued at \$27,829 during December, 1920. Belgium was the chief purchaser, taking 142,413 lbs. or 69 per cent of the total amount exported. Germany furnished the next most important market, taking 31,743 lbs., while England and Canada took slightly more than 14,000 lbs. each.

## Minnesota Canned Corn Output \$5,250,000

Canned corn is the principal output of the canning factories of Minnesota. In 1919 there were 515,420 cases of corn packed, and 1920, 633,665 cases. The total value of all goods packed in the Minnesota canneries during the biennial period was approximately \$5,250,000. The present value of factories, machinery, equipment, etc., is over \$1,000,000.

## Australian Apples Available For Export

About 2,250,000 cases of Australian apples will be available for export during the coming apple shipping season, according to estimates published by the Canadian Department of Trade and Commerce. It is doubtful, however, states the report, whether shipping facilities can be obtained for the movement of anything like this quantity.

## Maple Sugar Stocks Held Back

The recent scarcity of sugar cane appears to be one of the main reasons for holding back so much of the 1920 maple sugar production, although stocks reported held are only about 4 per cent of the total output. The greater part of the supply is held in the States of New York and Vermont.

## To Handle "Dromedary" Account

The Hills Brothers Company, "Dromedary" dates and cocoanut, New York, has placed its account with Barton, Durstine & Osborne, Inc., New York, for the handling of its advertising.

## Gain in Butter Production in Holland

A considerable gain in butter production over the previous year in Holland is reported by the Consul General in Rotterdam, in spite of a serious outbreak of the foot and mouth disease among the milch herds in April and May, 1920. The returns of the Government butter control authorities show a production in 1920 of 46,600 metric tons of butter, as compared with 43,500 in 1919; 39,800 in 1918; 51,200 in 1917, and 59,500 in 1916, the last year in which production represented an approach to the normal which in pre-war years averaged 64,000 metric tons per year. Out of this total production in 1920 there was exported to all countries a total of 20,673 metric tons.

The entire milk production of the Netherlands is carefully controlled even at the present time. The production, and especially the distribution of butter was carefully controlled by the Government since early in the war, and export was permitted only under permit up to November 13, 1920.

Exports to the United States have been altogether a matter of comparative price and really depended mostly upon exchange, for with the depressed value of the guilder as compared with the dollar the United States was able to pay what were comparatively high prices in the Netherlands, and still secure the butter for a price in gold which was competitive with domestic production and butter from other countries.

## Wholesale House Changes Hands

The wholesale house of the Stetson-Barret Company, Los Angeles, Calif., has recently been purchased by B. A. Simpson of Ardmore, Okla.; A. O. Simpson, St. Louis, and H. C. Ashby, Hollywood, Calif., and will be known as the Simpson-Ashby Company. In the reorganization of the company, B. A. Simpson becomes president, and H. C. Ashby and A. O. Simpson vice presidents. J. A. Cattell, secretary and treasurer of the old organization, is to continue in that position, while J. H. Gough, for many years a director, remains in the same capacity. A. B. Barret and A. L. Stetson retire from active participation in the business, although both still retain heavy holdings in the company. The only other changes in the personnel of the original concern is the retirement of A. A. Hunt, vice president and general manager, and the addition of H. S. Tillinghast and G. D. Houston, who for many years have been connected with the Simpson interests, as department buyers.

## Expect Record Maple Sugar Crop

An output of about 1000 tons of maple sugar in Canada with a value of \$2,000,000 is predicted this year by the Department of Agriculture at Ottawa. Preparations were recently completed to handle what is expected to be the greatest production of maple sugar recorded in Canada.

Steinhardt & Kelly, well known operators in green fruits, now located in their own building at Washington and Warren Streets, New York City, have added a dried fruit department, and have selected W. J. Cantwell to manage it.



World's Cheese Trade Far Below 1913 Figures

American Imports Greater Than Exports Because of Continued Shortage in Europe

The international movement of cheese since the year 1913 has experienced a considerable decrease according to the Department of Agriculture. The import demand in the 21 countries shown in Table 1 indicates a decrease of 30 per cent in 1919 as compared with 1913. At the same time the quantity of cheese furnished by these countries (representing in 1913 98 per cent of the total exportable surplus of the world) was not quite sufficient in 1919 to meet even this decreased demand.

Important changes have also taken place in the world's sources of supply and demand for cheese. Europe in 1913 was practically self-sustaining in the quantity of cheese produced, whereas in 1919 the exporting countries of Europe were furnishing only about one-tenth of Europe's imports for consumption. The excess of exports of the Southern Hemisphere tended to compensate for the decrease in the European supply, increasing from 69,000,000 lbs. to 134,000,000 lbs. The importations for consumption by these southern countries almost ceased, decreasing from 28,000,000 lbs. to 500,000 lbs., but their exports doubled.

U. S. Exports Exceed Imports

The international cheese trade of the United States prior to the war resulted in a considerable excess of imports. This country is now exporting slightly more cheese than is imported. This is attributable not so much to an oversupply of cheese in the United States as to the great shortage in Europe.

In the world cheese trade the chief sources of supply during 1919 were by no means the same as in 1913.

Considering the European countries as a unit, it is most significant that the cheese exporting countries in 1913 furnished 278,000,000 lbs. in excess of their imports, or the equivalent of 89 per cent of Europe's total imports for consumption, whereas in 1919 the European countries that were still exporting furnished only 28,000,000 lbs. or the equivalent of 10 per cent of Europe's imports for consumption. Italy changed from an important exporting country to an importing country. Italy was the greatest exporter of cheese to the United States before the war. Switzerland's excess of exports, amounting in 1913 to more than 70,000,000 lbs., had in 1919 become insignificant. The exportable surplus of the Netherlands was in 1919 less than one-fifth of what it had been in 1913.

All exporting countries outside of Europe in 1913 furnished 217,000,000 lbs. in excess of their imports. The total importation for consumption by countries outside of Europe amounted in the same year to 82,000,000 lbs. In 1919 the importation for consumption by these countries had fallen to less than 1,000,000 lbs. while the excess of exports had increased to 245,000,000 lbs. Argentina shifted from an excess of imports amounting to 11,000,000 lbs to an excess of exports of approximately 20,000,000 lbs. New Zealand, by nearly doubling its 1913 exports, displaced Canada as the greatest cheese exporting country. Cheese production in Canada

Table 1.—International Trade in Cheese, 1913 and 1919.

(In thousands of pounds; i. e., 000 omitted.)

Countries. <sup>1</sup>	1913		1919	
	Excess of imports over exports.	Excess of exports over imports.	Excess of imports over exports.	Excess of exports over imports.
	Pounds.	Pounds.	Pounds.	Pounds.
United Kingdom.....	248,976	.....	236,976	.....
United States.....	52,935	.....	.....	2,838
Belgium.....	25,607	.....	16,876	.....
France.....	20,680	.....	7,896	.....
Argentina.....	11,106	.....	.....	19,561
Egypt.....	6,330	.....	115	.....
British South Africa.....	5,690	.....	.....	1,539
Spain.....	5,689	.....	1,122	.....
Brazil.....	4,192	.....	205	.....
British India.....	1,297	.....	304	.....
Sweden.....	1,208	.....	3,558	.....
Denmark.....	814	.....	564	.....
Panama.....	393	.....	85	.....
Dominican Republic.....	32	.....	258	.....
Canada.....	147,353	.....	107,380	.....
Netherlands.....	144,673	.....	27,372	.....
Switzerland.....	70,976	.....	363	.....
New Zealand.....	68,499	.....	110,957	.....
Italy.....	59,966	.....	9,330	.....
Finland.....	2,179	.....	39	.....
Australia.....	1,238	.....	2,289	.....
Total.....	394,949	194,831	276,789	272,358

<sup>1</sup>The countries included represented, in 1913, 81% of the total import trade and 98% of the total export trade. Figures for the countries not shown are not available for 1919. For 1913 the total excess of imports for these countries was 92,139,742 lbs. and the total excess of exports was 9,936,432 lbs. Germany, in 1913, had an excess of imports amounting to 56,299,937 lbs., Austria-Hungary an excess of imports amounting to 12,191,095 lbs., French Africa an excess of imports amounting to 8,847,060 lbs., and Cuba an excess of imports amounting to 5,123,491 lbs. Bulgaria and Russia had an excess of exports amounting to 3,994,198 lbs. and 3,833,482 lbs., respectively.

Table 2.—Imports of Cheese Into the United Kingdom.

Imported from—	1913	1919	1920
	Pounds.	Pounds.	Pounds.
Netherlands.....	32,692,210	8,872,304	12,565,952
Italy.....	11,400,928	20,160	105,512
United States.....	2,514,288	1,810,928	8,200,192
Australia.....	888,496	12,626,432	7,998,480
New Zealand.....	61,234,384	138,829,936	141,191,904
Canada.....	144,992,016	72,487,744	126,532,886
Other countries.....	3,619,728	2,596,496	12,163,280
Total.....	257,302,080	237,244,000	303,699,216

has decreased while the production of condensed milk and ice cream and the use of whole milk and cream in the home have increased.

Prior to the war the United States ranked third among the cheese importing countries. In 1913 this country imported for consumption approximately 53,000,000 lbs., while the United Kingdom imported 249,000,000 and Germany 56,000,000 lbs. During 1919 the exports of the United States exceeded the imports by 2,827,000 lbs. Although this amount is not so much as 1 per cent of the total exportable surplus of the 21 countries under consideration, it nevertheless is significant as an excess of exports in comparison with the excess of imports in 1913. Some importation of cheese must, of course, be regarded as the normal situation in the United States as in other countries. There is always more or less of a demand for "foreign" varieties resulting in simple exchange between countries.

U. S. Production During 1920 Decreases

Although complete statistics for 1920 are not available for comparison, important developments are indicated by the trade of the United States and the United Kingdom during that year. The imports and exports of the United States

practically balanced in 1920, the imports amounting to 15,993,725 lbs. and the exports to 16,291,319 lbs. This difference measures a favorable balance of trade in cheese to the amount of 297,594 lbs. for that year. The shift from a large excess of imports to a continued excess of exports is shown in the accompanying graph.

Lessened domestic consumption and prevailing conditions of foreign demand and supply, explain the existing trade situation of this country. Production in the United States during the year 1920 has not increased. Both the production and consumption of cheese fell off in the United States during 1920. The quantity of American cheddar cheese produced in the United States in the first nine months of 1920 was 198,000,000 lbs. compared with 247,000,000 lbs. for the first nine months of 1919, showing a decrease of 49,000,000 lbs. Cheese receipts in the principal markets showed some increase during the last three months, traceable to diversion of milk from condenseries into cheese production. There were in storage Jan. 1, 1921, practically 13,000,000 lbs. of cheddar cheese compared with 21,000,000 lbs. on Jan. 1, 1920. The production of American cheddar cheese represents only about 75 per cent of the total cheese production of the United States and this kind is therefore not an exact index. Still a marked decrease amounting possibly to 40,000,000 lbs. is evident in the consumption as well as the production of cheese in this country during 1920.

The average price of cheese on the New York market for 1919 was 3.64c above the index number measuring the level of prices of 22 articles of food whereas for the year 1920 the average price of cheese was 3.21c below this index. This lower price appears to bear a closer relation to the decreased production of 1920 than to the decreased consumption of that year. It is generally known that the food value of cheese is not appreciated in the United States sufficiently to be reflected in a high per capita consumption.

The great cheese producing countries of Europe were at the end of 1920 recovering but slowly from the effects of the war and shortage of feed. Italy exported to the United States during the year less than 1,000,000 lbs.

Europe, however, with its dense population and relative scarcity of meat needed and continued to buy cheese, whereas butter was subject to Government control and to the substitution of the cheaper margarine. The United Kingdom is the greatest consumer of imported cheese as well as of imported butter. In 1913 that country imported for consumption 51 per cent of the exportable cheese surplus of all the countries of the world. Comparing the butter surplus in the 21 countries under consideration with the cheese shortage, it is to be noted that in 1919 the imports of butter for consumption by the United Kingdom had decreased by 60 per cent and in 1920 by 57 per cent as compared with the 1913 imports. The importation of cheese, on the other hand, had decreased by only 4.8 per cent in 1919 and shows an increase of 24 per cent in 1920, as compared with 1913. Table 2, showing by countries the imports of cheese into the United Kingdom for 1913, 1919, and 1920, indicates that demand is being materially strengthened.



## Sugar Largest Selling Item in Retail Grocery Store

Records of its sales analyzed by a large Eastern grocery store show that sugar is the largest item among the staple items carried in stock, butter is second, cured meats third and canned milk fourth. The percentages are given in the following tabulation:

	Per Cent.
Sugar .....	13.6
Butter .....	12.9
Cured meats .....	11.5
Canned milk .....	7.6
Fresh fruits and vegetables.....	5.6
Soap .....	5.5
Eggs .....	5.2
Butter substitutes .....	4.2
Vegetable fats .....	3.5
Salad dressing .....	2.9
Flour .....	2.6
Tea and breakfast foods.....	2.1
Coffee .....	1.9
Canned salmon .....	1.8
Canned corn, peas and tomatoes..	1.5
Cheese .....	1.0
Canned meats, sardines.....	0.3
Dried fruit .....	0.3
Macaroni .....	0.3
Dried fish .....	0.3
Gelatin .....	0.3
Canned fruit .....	0.2
Spices .....	0.2
Syrup and molasses.....	0.2
Jelly and jam.....	0.2
Catsup .....	0.2
Mustard .....	0.1
Sauces .....	0.1
Coffee substitutes .....	0.1
Vinegar .....	0.1
Starch .....	0.1
Olive oil .....	Less than 0.1
Pickles .....	Less than 0.1
Soda .....	Less than 0.1
Stove polish .....	Less than 0.1
Soups .....	0.9
Baked beans .....	0.9
Canned fish .....	0.9
Fruit juices .....	0.9
Beverages .....	0.9
Malted milk .....	0.8
Yeast .....	0.8
Tooth picks .....	0.8
Honey .....	0.8
Bird seed .....	0.8
Nuts .....	0.7
Raisins .....	0.7
Currants .....	0.7
Sweet crackers .....	0.6
Cocoa, chocolate .....	0.6
Baking powder .....	0.5
Oil .....	0.5
Matches .....	0.4
Olives .....	0.4
Dried vegetables .....	0.3
Prepared flour .....	Less than 0.1
Canned vegetables (except corn, peas and tomatoes) ....	Less than 0.1
Relishes .....	Less than 0.1
Cleaners .....	Less than 0.1
Clams .....	Less than 0.1
Oysters .....	Less than 0.1
Salt .....	Less than 0.1
Puddings .....	Less than 0.1

## Jamaica Seeks Larger Market For Orange Crop

Jamaica could export 1,000,000 boxes of oranges annually if a market could be found, says the Agricultural Society of Jamaica. There is a movement at present to secure a preferential import duty on oranges into Canada for the purpose of enlarging the market. The annual consumption of oranges in Can-

ada is estimated at about 2,000,000 boxes, so that if a tariff preference were secured Jamaica could supply half of the Canadian market.

During 1919 and 1920 it was found that oranges could be more profitably utilized for the production of orange oil, which until recently was bringing very high prices. The sale of oranges consequently was greatly depressed. Jamaica shipped 188,416 lbs. of orange oil during 1919, for the production of which an amount of oranges equal to 842,075 boxes was used.

## Recent Patents

The following patents of interest to readers of The American Food Journal recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Continental Trust Building, Washington, D. C., at the rate of 20 cents each. State number of patent and name of inventor when ordering.

1,368,407. Apparatus for manufacturing sausages. Oscar G. Mayer, Chicago, Ill.

1,368,624. Cheese and process for sterilizing same. George H. Garsin, Sidney, N. Y., assignor to Phoenix Cheese Co.

1,368,792. Treatment of semolina. Arthur R. Goodwin, Boscombe, England.

1,368,984. Arthir of food or confection. Julius R. Franzen, Portland, Ore.

1,369,231. Pineapple-meat eradicator. George E. Fisher, Honolulu, Hawaii, assignor to Hawaiian Pineapple Co., same place.

1,369,345. Process and apparatus for sterilizing milk and other liquids. Oskar Lobeck, Leipzig, Germany, assignor to Chemical Foundation, a corporation of Delaware.

1,369,411. Apparatus for dehydrating or drying food products and other materials. William D. Edwards, Monte Vista, Colo.

1,369,986. Raisin-separating machine. Edward E. Stanley, San Diego, Cal.

1,370,049. Food obtained from fish and process of making the same. Sadakichi Satow, Sendai, Japan.

1,370,173. Dough-mixing machine. Sam Wasyliw, Cudworth, Saskatchewan, Canada.

1,370,272. Baking preparation. Harry M. Blinn, Baltimore, Md.

1,370,354. Bread-making. Cyrus J. Patterson and Ralph W. Mitchell, Kansas City, Mo.

1,370,372. Process of making a palatable syrup from sugar-beets. Sidney F. Sherwood, Washington, D. C.

1,370,634. Pineapple-fleshing machine. Joseph Dowson, Honolulu, Hawaii, assignor to Libby, McNeill & Libby of Honolulu, Limited.

## New Packing Concern Founded

J. C. Mullins, for a number of years head of the Charles F. Pinzel Grocery Company, Little Rock, Ark., has organized J. C. Mullins & Company, at 423 East Eighth Street, Los Angeles, Calif., to engage in the packing and distributing of Pacific Coast products. The new company will handle all varieties of Coast products and will deal with brokers in all markets throughout the country.

## Hecker Cereal Co. Launch New Product

The Hecker Cereal Company, New York City, has just completed the successful launching of a new product on the New York market, in twenty-one days.

The product, the result of more than a year's experimentation, is a ready-to-bake cake flour, consisting of a combination of flour, sugar, salt, egg yolks, vegetable shortening, skimmed milk, flavoring and baking powder.

An advertising agency employed by the Hecker Cereal Company hit upon the word "Jiggtime" as a name for the cereal. The company realized that the package must bear the name of the product, an illustration showing its use, and the proper directions, and referred the whole matter to the art department of a carton manufacturer, which produced a design in yellow and blue with a red circle at the top bearing the word Hecker in white script.

In the meantime, nothing had been said to the salesmen, but when it was judged that the right time had come, they were summoned to a dinner at which the first announcement of the new product was made. Representatives from the various departments gave talks designed to tell the men thoroughly of the merits of the goods.

The advertising had been prepared so as to appear breezy, colloquial and cheerful. A laughing advertising character in the form of a jack-in-the-box springing out of his covering in conformity with the name "Jiggtime" was created, and advertising which appeared in the metropolitan newspapers was run as a "teaser" campaign for the first few days, with the jack-in-the-box pictured alongside a tumbled row of blocks spelling out the name "Jiggtime." Finally the complete advertisement appeared containing descriptive copy and a cut of the package retaining the jack-in-the-box figure.

## California Fruit Growers Announce Cooperative Policy

The California Peach & Fig Growers, Fresno, Cal., have announced the inauguration of a policy of cooperation with retailers throughout the United States, the object of which is to acquaint the housewives with the economical and dietetic value of the dried peach. Educational advertising through the magazines and newspapers and specialty exploitation will be the predominating features of the new movement.

The initial move in the new campaign has for its field thirty of the largest cities in the United States and calls for the use of newspapers with an aggregate daily circulation of 3,500,000 readers, a Sunday circulation of over 2,500,000 and magazines circulating in this same territory with over 8,000,000 readers. The newspaper campaign alone will utilize 15,225 inches of direct advertising space and will be supplemented with informative publicity. If desired results are obtained, the field will be expanded.

Advertising stickers, done in color and featuring the Blue Ribbon hermetically sealed carton, are to be used. Grocers in thirty cities will use the stickers to seal every package sent out during the six weeks' campaign.



## German Vegetable Oil Importations

Interesting figures on German vegetable oil importations for the years 1911, 1912, 1913, the last three years in which statistics were available from that country, have been compiled by the U. S. Bureau of Foreign and Domestic Commerce.

Peanut oil imports are listed as 922,405 lbs., worth 301,000 marks, for 1911; 2,307,114 lbs., worth 878,000 marks, for 1912, and 1,133,605 lbs., worth 436,000 marks, in 1913.

Olive, sesame, peanut, rape, and other fatty oils, in containers other than casks: imports, 1911, 1,067,247 lbs., worth 403,000 marks; 1912, 1,142,865 lbs., worth 471,000; 1913, 993,834 lbs., worth 407,000. Exports: 1911, 75,635 lbs., worth 515,000 marks; 1912, 923,948 lbs., worth 588,000 marks; 1913, 1,044,996 lbs., worth 615,000 marks.

Peanuts: imports, 1911, 154,636,156 lbs., worth 19,833,000 marks; 1912, 154,034,300 lbs., to the value of 18,782,000 marks; 1913, 216,238,952 lbs., worth 28,162,000 marks.

### To Utilize Waste Apples

A method of extracting by-products from waste and otherwise useless apples has been discovered at Annapolis Royal, Nova Scotia, according to the report of the Consul John J. Mcunn, Yarmouth, Nova Scotia, Canada. A Yarmouth press report on the subject says:

"It has been found that even the most intensely acid and usually worthless apple may be so treated by a simple process as to yield sirup which has been pronounced eminently desirable as a basis for other concoctions not hitherto so well supplied. And not only is this sirup valuable, but another by-product has become evident in deposits of calcium malate, the same article as is derived from maple sirup and known as sugar sand. Before the war the Germans bought this up extensively in Quebec at \$1.50 or more per pound as a source of malic acid. The process is being carried on in two evaporators and may lead to the development of an entirely new industry in Nova Scotia."

From one of the persons interested in the discovery it is learned that experiments are still going on, but that at present no further details will be made public.

### Canada Reduces Salmon Pack For 1921

A further reduction of the yearly salmon pack of British Columbia is announced. Some time ago, it was estimated that only 40 per cent of the salmon pack customarily produced would be canned during 1921, but now some canners look for only a 20 per cent pack. Some canneries are prepared to put up about 25 per cent of their normal output, while others are figuring on only 15 per cent. These will all be sockeyes. No "chums" will be canned in British Columbia during 1921, as there are close to three-quarters of a million cases still in stock without a market.

Japanese and Alaskan canneries glutting the British market, and the present high cost of tin plate and boxes is the reason advanced by the canners for this reduction of output.

## Dutch Coffee Trade Affected By Low Mark

Inability of Germany, Austria and other Central European countries to import their usual supplies is given as the chief reason for the present abnormal conditions in coffee imports and exports in the Netherlands. The trade has diminished to one-half of that before the war. Although the United States took more coffee from Holland the past year than usual, the real value of the Dutch export trade depends preeminently upon Germany, and to a considerable extent on Belgium, Switzerland and Scandinavia. As the exchange value of the mark decreased during the past year, the imports of coffee into Germany decreased. Until there is a radical change in the financial situation in Germany, there will be no marked improvement in the coffee trade of the Netherlands.

### Announce Brokerage Mergers

Two mergers in the brokerage business have recently taken place. The Eastern States Sales Co., and Ben A. Weinberg have merged and will be known as the Shampanier-Weinberg Company, operating as heretofore as food products brokers at 100 Hudson Street, New York.

William S. Nichols, surviving partner of the late Jed Frye in the New York sardine distributing firm of Jed Frye & Company, has taken in his two brothers, Albert I. and Ernest V. Nichols, as partners, and will conduct the business under the old name of Jed Frye & Company, although the estate of Jed Frye no longer has an interest in the company.

### Canned Milk Important Siam Dairy Import

Most important among the dairy products imported into Siam is canned milk, and according to the report of the Vice Consul in Bangkok, values have largely exceeded per-war figures, although the volume has not yet been reached. According to the customs entries at the port of Bangkok, 803,892 kilos of canned milk, valued at 346,762 ticals (\$128,302) were landed at that port during the pre-war fiscal year ended March 31, 1914, against 359,182 kilos, valued at 417,794 ticals (\$154,584) in 1918-19, and 544,025 kilos, valued at 55,923 ticals (\$204,951) in 1919-20.

### Packers and Employees Reach Wage Agreement

The dispute between the packers and their employees over wages and working conditions has been settled under a compromise agreement, which allows the wage reductions to stand, and restores the eight hour day and overtime as announced in the latest rulings of Judge Altschuler as administrator. The end of the negotiations came after three days of conferences, attended by Government officials and representatives of the packers and employees.

### Memphis Brokers Change Name

T. H. Milliken & Co., brokers and manufacturers' representatives at Memphis, Tenn., announce the change in name of their concern to Milliken & Prescott. Mr. Prescott has been connected for several years with the Nestle's Food Co.

## Newspaper Issues Section on Pineapple History

The Pacific Commercial Advertiser, Honolulu, has issued a sixteen page section devoted to the history and development of the pineapple industry in the Hawaiian Islands.

A number of interesting points about the fruit are brought out, among them a chronology of the industry, which has for its earliest date, January, 1813, when pineapples were planted in Hawaii by Don Francisco Paula y Marin, a Spaniard. The first pineapple plantation consisting of five acres was established in the Ma'noa valley in 1885, by Captain John Kidwell, using Manoa plants.

Tremendous increase in pineapple consumption is indicated by comparative figures of an initial pack of 1587 cases in 1904, and that of 1921, in which 633,390 cases were packed.

Wahiawa, Hawaii, is credited with being the birthplace of the fruit, but there were still earlier similar fruits on the Island of Jamaica which are said to be the ancestors of the pineapple.

## California Olive Average Doubled in Ten Years

There are between 25,000 and 30,000 acres of bearing olives in California, according to latest estimates of the State Department of Agriculture. The principal production, it is reported from the same source, is in Butte, Tehama, Los Angeles, Riverside, San Diego and Tulare counties.

The figures given out by the department are based upon crop reports and estimates for 1918. At that time estimated production of 13,801 tons of olives was based upon bearing acreage of 18,801. The value of the 1918 crop was placed at \$2,000,000. The same report showed a nonbearing acreage of 12,222, and since 1918 many of the new groves have come into bearing.

An interesting fact is brought out by figures showing that the olive acreage in California has been practically doubled in the past ten years.

### American Chicken Soups Hit By Canadian Law

Because of the very rigid canned foods laws of Canada, it has been exceedingly difficult for dealers in that country to import any canned products containing chicken or other poultry. "As a result of this," says Canadian Grocer, "many of the American-made chicken soups are not to be found on the Canadian market any more, since the supplies which were on hand at the time of the enactment of this legislation have now been depleted. As chicken soup is a food which takes a prominent place in the diet of the sick and invalids, this would have been a hardship had it not been for the efforts on the part of Canadian manufacturers to fill the breach by a bigger output and of a high quality. This has meant a real effort on the part of some manufacturers, as the canning of chicken entails a lot of work, when it is done properly, and those shouldering the responsibility in Canada are not many. A few manufacturers are supplying the needs of the whole of Canada for canned chicken."



### Milk Bottle Maker Cited by Trade Commission

Upon application for the issuance of a complaint, the Federal Trade Commission has, as required by law, the public interest appearing, cited the Thatcher Manufacturing Company, Elmira, N. Y., in complaint in the milk bottle business.

The citation is under Section 7 of the Clayton Act, which recites that no corporation shall acquire, directly or indirectly, the stock of another corporation where the effect of such acquisition may be to substantially lessen competition between the two corporations, or to tend to create a monopoly in any line of commerce.

The complaint sets out that, while operating under rights acquired from the Owens Bottle Machine Company, the Thatcher Manufacturing Company in 1918 made and sold approximately one-half of all the milk bottles in the United States. At this time the Thatcher company was in competition with a number of concerns operating under an invention by the Hartford-Fairmont Company.

Control of these competing companies, to-wit, the Travis Glass Co., Clarksburg, W. Va.; Essex Glass Co., Mount Vernon, Ohio; Lockport Glass Co., Lockport, N. Y., and the Woodbury Glass Co., it is alleged in the complaint, was acquired by the Thatcher Company in August, 1919, thus giving the Thatcher Company the control of from 50 to 90 per cent of all the milk bottle business in the United States.

The complaint avers that the effect of these acquisitions has been to eliminate competition, and to create a monopoly in this line of business in the hands of the Thatcher Manufacturing Company. Thirty days are allowed for filing answer, after which the case comes on for hearing on April 28th, or as soon thereafter as the same may be reached on the Commission's calendar.

### Establish Louisiana Strawberry Wine Plant

The first winery for the manufacture of strawberry wine in the United States, and the first winery of any kind in the South, is to be established at Hammond, in Tangipahoa Parish, La. The purpose of the winery will be to care for a \$5,000,000 surplus strawberry crop in Florida, and prevent it from going to waste.

### Large Foreign Sales By California Prune Association

The California Prune and Apricot Growers Association has sold 7,000,000 pounds of prunes of small sizes to Germany, payment for which was secured from money on deposit in New York and San Francisco. This association company recently confirmed the sale of 680,000 pounds of prunes and apricots to Copenhagen, Denmark.

### Canned Irish Stew on Market

Canned Irish stew is being placed on the market by the D. P. Daggett Canning Company, Coopersville, Mich. An advertising campaign in Michigan newspapers has been begun. The Brearley-Mamilton Company, Grand Rapids, Mich., is handling the advertising.

## PERSONALS

E. S. Frey, Baltimore, Md., has become vice president and general superintendent of the Michigan Canned Food Company, a million dollar corporation recently organized in Michigan. Mr. Frey, who has been interested since early boyhood in the canning of oysters and other sea foods, was at one time connected with the United States Canning Co., Buffalo, N. Y. Severing his connections there, he became general superintendent for W. R. Roach & Company, Hart, Mich., remaining with them for eighteen years.

William H. Smith, who has been in charge of the Greenwood Food Products Company for the past two years, has succeeded T. O. Ballard as vice president and general manager of the Wisconsin Canned Food Company. Mr. Smith expects to take the packing operations under his personal supervision this season. The company built four new factories last year, but has sold three of them. Its plants at Fairchild and Black River Falls will be in operation this year.

Wade L. Street of the T. A. Snider Preserve Company, Chicago, on the advice of his physician, has resigned the chairmanship of the catsup section of the National Cannery Association. Mr. Street has also requested his release from membership on a number of committees in other organizations in food lines with which the T. A. Snider Preserve Company is affiliated.

Don Francisco has resigned as advertising manager of the California Fruit Growers' Exchange, and will become co-manager of the Pacific Coast offices of the Lord & Thomas Advertising Agency about May. He will also act as counsel on co-operative agricultural marketing account for Lord & Thomas, making his headquarters at Los Angeles.

Thomas W. Harrison, advertising manager of the Berger & Carter Co., food preserving machinery, 365 Market Street, San Francisco, Calif., has resigned, effective March 31. He is planning the establishment of an advertising service agency, specializing in machinery and mechanical goods.

A. F. Kittle of Nielson & Kittle Canning Company, Ltd., San Pedro, Cal., has resigned his position as vice-president and general manager. He is negotiating for the purchase of a sardine cannery in California.

### Wilson & Co. Report Deficit For 1920

A deficit of \$2,691,561 is indicated in the annual report of Wilson & Co., Chicago. This is compared to a surplus of \$1,288,032 in the preceding twelve months. After allowing for interest charges, a loss is shown of \$940,850. A reserve of \$2,000,000 against contingencies arising from fluctuations in exchange on the company's net interest in South America and other countries has been set up against profit and loss surplus account for 1920.

### Tariff Has Effect on Contracts

The present unsettled tariff question has had a secondary effect upon contracts for foodstuffs which is reflected in the following circular letter from Secretary Toulme to the members of the National Wholesale Grocers' Association:

"We assume that the wideawake, businesslike wholesale grocer is reading all of his contracts with unusual care before he signs them.

"Some contracts received recently include a provision to the effect that any new or additional Federal taxes covering the goods embraced in the contract are to be paid by the purchaser, in addition to the contract price.

"The obvious reasons that have led to the increased use of stipulations of this kind are, first, increased customs duties now being considered at Washington, and, second, increased internal taxes on commodities or sales that are suggested from time to time at Washington.

"The wholesale grocer should be alert to protect himself in this matter. It can be handled either by insisting that such provision be omitted from his purchase contract, or, more certainly be inserting a provision in his own sales contract somewhat as follows:

"Any taxes, customs duties or other imposts, State and Federal, put upon the goods embraced in this contract subsequently to the date hereof shall be paid by the purchaser in addition to the contract price."

### Rice Bill Passed In Japan

A rice bill has been passed by the Japanese Diet at Tokio. This bill which was presented by the Government in order to stabilize the price of rice in the face of a tremendous surplus stock, involves the maintenance by the Government of warehouses for the storage of rice and the purchase by the Government of rice to be held in storage pending more favorable marketing conditions. It is not known how much financing the Government will have to perform to carry out these plans, but from the fact that the estimates of the superfluous rice stocks this year range from 10,000,000 to 15,000,000 bushels, it is evident that the amount will be very considerable.

### Spain Second Among European Countries in Production of Corn

Spain, compared with the other countries of Europe, both western and central, ranks second in the production of barley, corn, and rice; third in wheat, rye, and grapes; fifth in potatoes; seventh in sugar; and ninth in oats, reports the American commercial attache at Madrid. More than half of the agricultural wealth of Spain consists in cereals and wine.

### International Dairy Exhibition in Argentine

An international dairy exhibition is to be held at Palermo (Buenos Aires) from May 8 to 27, 1921, by the Argentine Rural Society. The exhibition will be divided into three sections: Exhibition of Cattle, ewes and goats; instruments, machines, and installations for the dairy industries, and dairy products.



# "Served Perfectly!" How it is done with America's Favorite Beverage



You meet few men with skill like that of the soda fountain expert. He takes a six-ounce glass and draws just one ounce of Coca-Cola syrup—the precise base for the best drink—service that eliminates waste.

Take a six-ounce glass, not a larger or a smaller one.

One press on the syrup syphon, with the soda man's sense of touch for exact measurements, gives one ounce of Coca-Cola syrup—you know just where it should come to in the glass to be precisely the right amount.

Pull the silver faucet for five ounces of pure, ice-cold carbonated water—with the one ounce of syrup, this quantity fills the glass.



With a deft, sure hand he adds the ice-cold, sparkling water. It looks for an instant as though the glass would overflow, but it doesn't. The amount is five ounces—exactly the right proportion.

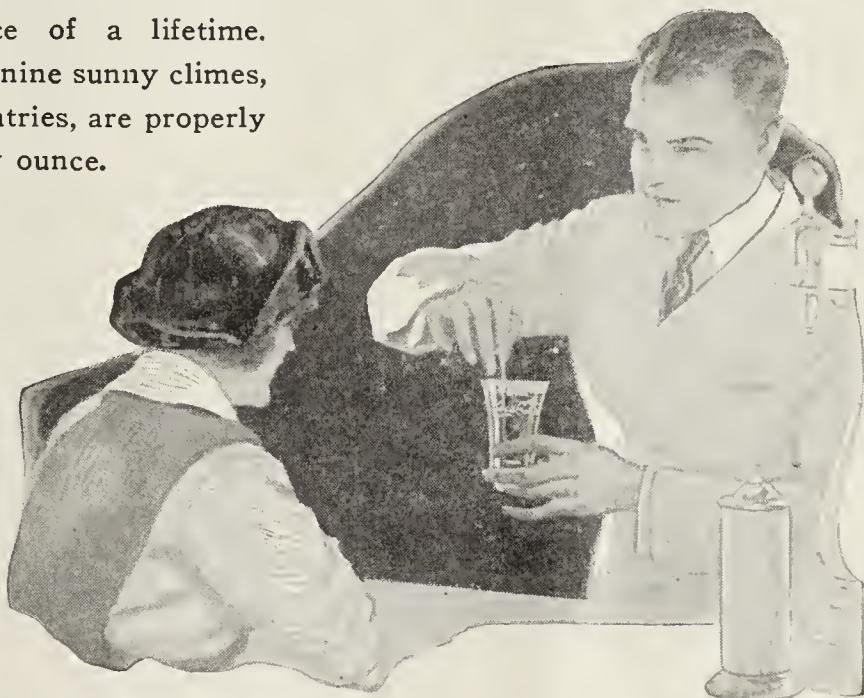
You may take up a bit of the proportion of water with ice, as a small cube or crushed. Stir with a spoon.

Done quickly? You bet. The rising bubbles just have time to come to a bead that all but o'ertops the brim as the glass is passed over the marble fountain for the first delicious and refreshing sip.

That's the soda fountain recipe for the perfect drink, perfectly served. Coca-Cola is easily served perfectly because Coca-Cola syrup is prepared with the finished art that comes from the practice of a lifetime. Good things from nine sunny climes, nine different countries, are properly combined in every ounce.

Guard against the natural mistakes of too much syrup and too large a glass. Any variation from the ratio of one ounce of syrup to five ounces of water, and something of the rare quality of Coca-Cola is lost; you don't get Coca-Cola at the top of its flavor and at its highest appeal.

Coca-Cola is sold everywhere with universal popularity, because perfect service and not variations is a soda fountain rule.



It has all been done in flashes. The glass is before you before there is time for conscious waiting. Thirst is answered by the expert with Coca-Cola in its highest degree of deliciousness and refreshingness.

## Drink

# Coca-Cola

DELICIOUS AND REFRESHING  
THE COCA-COLA COMPANY, ATLANTA, GA.



## Germany Takes Bulk of Holland Milk Export

Nearly the whole of the exports of fresh milk from the Netherlands in 1920 were to Germany, the exports at times during the year reaching a total of 70,000 liters (liter equals 1.056 quarts) a day. Eighty per cent of the exports of condensed skimmed milk in 1920 went to Great Britain, the rest being divided between the United States and Germany, while of the exports of condensed full milk, Germany took substantially 33 per cent, Great Britain and the Dutch East Indies 20 per cent each, and France, the United States and Greece, in the order named, most of the remainder.

The value of the exports of such products in 1920 reached a total of 48,756,744 guilders, or \$16,252,246. The total fresh whole milk, \$596,207; condensed full milk with sugar, \$5,025,470; condensed skimmed milk with sugar, \$8,573,105; condensed whole milk without sugar, \$116,024; condensed skimmed milk without sugar, \$6,021; sterilized and other milk and cream, \$139,779; full milk powder, \$1,093,217; and skimmed milk powder, \$700,425.

### Chart Canned Tomato Production

The Bureau of Crop Estimates at Washington, D. C., has constructed a chart wave of canned tomato production which indicates that in the past quarter of a century the pendulum registering the production of canned tomatoes from 1891 to 1919 has swung with surprising regularity from low to heavy output.

The chart indicates the first peak to have been made from 1891 to 1894, when an output of 7,000,000 cases was reached. In the two following years, a decline equal to the first rise is shown, and then in 1899, a spurt to 8,000,000 cases. A two-year decline then brought production down to almost 4,000,000 cases in 1901, with a subsequent rise to 10,000,000 cases in 1903; 1905 saw another big slump with a proportionate increase to 13,000,000 cases in 1907. The slump that followed in 1910 and 1911 was not marked, falling only as low as 10,000,000 cases, with a rise to 15,000,000 in 1914. However, 1915, due to the war, saw a tremendous falling off, to 7,000,000 cases, with the highest peak reached in 1918, with 16,000,000 cases. In 1919, the chart indicates a downward line, going to 11,000,000 cases, but rising immediately.

According to the rule established by the previous swings of the pendulum, 1921 should show increase in pack as part of a gain in volume toward another peak, but the outlook is for a swing downward toward another low. Producing conditions are not favorable to a heavy pack because of the unsold portion of 1920 tomatoes and the high cost of replacement. Many canners predict that the line will show as sharp a perpendicular drop as that of 1914-1915.

### Another New "Domino" Product

The American Sugar Refining Company is now offering Domino Sugar-Honey to the trade. Domino Sugar-Honey is a blend of honey and invert sugar. The characteristic tang of honey is mellowed by the addition of invert sugar. The product is recommended by the manufacturer for use on waffles, pancakes and hot biscuits.

## Wheat Supply in Country Not Excessive

That wheat supplies in the United States as of March 1 are not excessive is the view taken by specialists of the Bureau of Markets, United States Department of Agriculture.

The estimate of the Bureau of Crop Estimates showed 208,000,000 bushels of wheat on farms, and another estimate announced March 10 placed the amount of wheat in country mills and elevators at 82,000,000 bushels. To these totals was added the visible supply at terminal points, making a grand total in the three positions of 320,000,000 bushels.

On March 1, 1920, the amount of wheat held in the three positions was estimated to be 338,000,000 bushels, and on March 1, 1919, the amount was placed at 359,000,000 bushels. Thus the amount on March 1 of this year was 18,000,000 bushels less than a year ago and 39,000,000 bushels less than two years ago.

### Slump in Export of Walnuts From Lyon District, France

Walnuts form one of the big export items to the United States from the consular district of Lyon, France, about one-third of the yield being normally sold in America, or between 1,500 and 2,000 tons. The annual yield is about 5,000 tons, including all varieties, both wild and cultivated, and constitutes one of the principal industries in that district. The demand for last year's crop has been limited, and growers and sellers have been pessimistic over the situation. American importers are placing few orders and are buying to satisfy only their immediate needs. Exports of walnuts in the shell for the last three months of 1919 and 1920 will show the marked difference in the quantities shipped: Last quarter of 1919, 2,463,884 pounds, worth \$817,278; last quarter of 1920, 688,812 pounds, worth \$264,541.

### Valencia, Spain, Important Source of Fruits and Nuts

Valencia, Spain, exported 315,337 lbs. of figs to the United States during 1920, compared with 682,388 lbs. during 1919, according to the American consul at that station. Exports of raisins from Valencia to the United States during 1920 amounted to 1,799,303 lbs. compared with 95,200 lbs. during 1919. Exports of shelled almonds amounted to 132,285 lbs. compared with 261,852 lbs. during 1919. Valencia also shipped 27,550 lbs. of unshelled almonds and 16,500 lbs. of unshelled peanuts to the United States during 1920.

### United States Imported 31,890,832 Pounds of Walnuts During 1920

The United States imported 31,890,832 pounds of walnuts valued at \$8,497,838 during 1920, compared with 31,495,977 pounds valued at \$9,302,603 during 1919. Of the total quantity imported during 1920, 15,818,025 pounds were shelled and 16,072,807 pounds unshelled. France, China, Italy, Japan, and Spain were the chief sources of imported walnuts during 1920.

During 1920 the United States re-exported 736,658 pounds of foreign walnuts and 341,566 pounds during 1919.

## Food Prices Stable in Britain

Meat prices in Great Britain in 1920 did not fall to any material extent, W. Weddel & Company, of London state in their thirty-third annual review of the frozen meat trade. The Government had complete control of the glut of meat in cold store in Great Britain, Australia and New Zealand, but merely adjusted mutton and lamb quotations; during the period April-June, large supplies of New Zealand lamb were sold to the United States, easing the pressure of supplies, while later, considerable quantities of beef were re-exported to Germany. The latter prevented a big drop in prices. Control of British meats ended on July 4, and in consequence of the maintenance of prices of foreign stocks at a high level, British farmers were placed in a favorable position.

In conclusion, this review says of the 1921 prospects:

"The outlook for the production in 1921 is just as it was a year ago; it can not be said to have improved. South America can doubtless increase its output if prices remain fairly high in Europe, but New Zealand, Australia and the United States will probably ship less, rather than more in 1920. Home supplies are still very uncertain, some authorities holding that recent losses in cattle can be made up quickly, although all are agreed that sheep stocks can be restored only slowly."

### Depression in Spanish Sardine Market

A depression of the Spanish sardine industry is being experienced in Vigo and throughout Northwestern Spain. Nearly a hundred packing establishments have shut down completely, and the remainder are only working on part time, with fewer employees. The situation is due to the lack of demand for sardines by importers in France and Italy, the principal market for same. Although this season's catch was smaller than in previous years, stocks on hand are very large. Exports to Spanish-American countries in 1920 were also less than usual. On the other hand, the market for these sardines in the United States and insular possessions is increasing.

It should be noted, says a consular report, that there are excellent and frequent opportunities to ship sardines from Vigo direct to the United States. The Ward Line has many sailings for New York and the West Indies, and the Cosmopolitan Steamship Co. has recently inaugurated a service to New Orleans and other United States ports. Freight rates are now 100 pesetas per ton.

### American Oil Chemists' Society To Meet In Chicago

The annual convention of the American Oil Chemists Society will be held May 16 and 17 in Chicago with headquarters at the Congress Hotel. Among the prominent chemists who will address the Oil Chemists is Dr. C. L. Alsberg, Chief of the U. S. Bureau of Chemistry. The entertainment committee with L. M. Tolman, chief chemist of Wilson & Co., as chairman, has planned numerous excursions, besides the usual banquet.

Thomas B. Caldwell, Wilmington, N. C., is secretary of the society.





Amy Smith says:

"I find Moxley's Margarine gives excellent results in cooking, having tested it on corn bread, biscuits and cakes."

"I have also served it for table use and think only an expert could detect it from a good grade of butter."

Amy Smith is the head of the Cookery Department of the great woman's magazine, "Today's Housewife."

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**Wm. J. Moxley Inc.**  
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KALAMAZOO, MICH.

## "America's Most Famous Dessert"



## JELL-O is Always Ready

"One of the prime merits of Jell-O is that it is always ready. With a package of Jell-O on the emergency shelf and some boiling water, there is no trouble in preparing a dessert which is sure to come out right. By the addition of fruit or cream an endless variety may be produced and the question 'What shall we have for dessert?' is nearer solution than it possibly can be in a household where Jell-O has no place."

*Christine Terhune Herrick.*

**2 Packages for 25 cents**

**The Genesee Pure Food Co.**

Bridgeburg, Ont.

Le Roy, N.Y.



## Figures on Canadian Canning Industries

The Canadian Bureau of Statistics reports that in 1919 there were in Canada 120 canneries, 40 preserving plants and 77 evaporating plants. Capital invested was as follows: Canneries, \$10,133,682; preserving plants, \$4,597,528; evaporating plants, \$1,225,485.

The total number of employees in all plants was 5,984 (2,561 male and 3,423 female workers), and the aggregate of salaries and wages was \$3,184,663. The great majority of the workers received between \$15 and \$24 per week.

Materials used were given a valuation on the basis of cost delivered at the factory or works, as follows: Preserving plants, \$951,814; canneries, \$9,450,632; evaporating plants, \$6,540,795. The selling value of products at the works was \$1,676,317 for evaporated fruits and vegetables, \$16,013,392 for canned products, and \$9,042,851 for preserved products.

Tomatoes were the most prominent item in the list of canned products, with 1,535,460 cases, valued at \$5,154,882. Corn is the vegetable next in popular favor, with a production of 659,690 cases, valued at \$1,975,995. Beans are far in advance of peas, with a pack of 338,989 cases, valued at \$1,270,356; peas totaling 271,181 cases, worth \$898,162. Canned jams amounted to 6,440,402 pounds, valued at \$1,261,807, and preserved jams, 30,623,531 pounds, valued at \$6,412,750.

## To Develop Dehydration Processes in France

The drying of fruit in France from an industrial point of view, is in its infancy, with the single exception of the well-known French prune industry at Agen, according to a report issued by the Commission for the Organization and Development of the Fruit Industry of France. The report states that the development of the dehydration industry in France is handicapped for several reasons, the first of which is the irregularity of the crops. France is a country of small landowners, and in years where the crops are limited it would not be profitable to dry fruits which can easily be sold in their natural state, and drying could only be carried on at irregular intervals when the crops were abundant. Under such conditions the machinery and personnel would have no occupation for a great part of the time, and the capital engaged in such an enterprise would not bring in sufficient profit to satisfy the farmers.

Another reason is the high cost of machinery of sufficient capacity to handle large quantities of products whose yields are irregular. Further more, the fruit farmers can not easily obtain the necessary information to allow them to organize this kind of industry, persons already engaged in the business not being willing to open the way to possible competitors. This condition has been particularly noticeable in the prune-drying industry at Agen.

To overcome this situation, the following recommendations were made by the inspector general of agriculture in his report to the commission: That practical demonstration centers for the fruit industry should be added, when-

ever possible, to the agricultural education establishments already in existence; that demonstration orchards should be started in the different regions of France. Further recommendations made by M. Nanot, director of the National Horticultural School at Versailles, to the commission were: That the Ministry of Agriculture make investigations in America, particularly California, in order to study the fruit-drying establishments and obtain full documentation thereon; that the Ministry of Agriculture organize trials and special expositions of dehydrating apparatus and dried products.

The greater part of the fruits dried in France is for local trade or for family consumption, most of the fruits being dried in the sun or in bakers' ovens.

A machine made by the Etablissement G. Vernon is used to a considerable extent in France for drying cider-apple residues. This machine, on account of its construction, can only be used for vegetable matter intended for feeding cattle. The French Ministry of Agriculture states that the machinery employed in France for the preparation of dried fruits and vegetables is similar to that used in the United States for like purposes. The two principal firms manufacturing these apparatuses are Grouvelle & Arquembourg and A. Savey Jeanjean & Co.

## England Turns to Production of Nut Margarin

The question has been raised whether or not the production and consumption of so-called nut margarin are increasing or decreasing in England, reports the American consul at London. Nut margarin is composed exclusively of vegetable oils, while the standard type of margarin is one composed in part of animal fats. It has been ascertained that most of the margarin produced in England during the war was made from animal fats, owing to the fact that shipping facilities from North and South America favored importations of animal fats in preference to oilseeds from the Far East and from Africa.

The general trend among margarin manufacturers, however, is toward using only vegetable oils, and some of the principal concerns not only operate large trading organizations to collect their oilseeds but also possess their own steamers and thus provide their own transportation. The present weekly consumption of margarin in England is somewhere in the neighborhood of 5,000 tons, of which probably 4,000 tons, are believed to be manufactured entirely from vegetable oils, while the remaining portion is more or less mixed with animal fat.

The average weekly production of margarin of all kinds during the last seven years as officially ascertained was as follows:

	Average weekly tons		Average weekly tons
1913.....	1,500	1917.....	3,475
1914.....	1,500	1918.....	4,550
1915.....	2,219	1919.....	6,255
1916.....	2,479		

The Indiana Wholesale Grocers' Association will hold its annual convention at the Claypool Hotel, Indianapolis, on April 20 and 21

## Market on Condensed Milk Shows Improvement

Reports from manufacturers of condensed and evaporated milk indicated somewhat improved business conditions during March. The tone of the market was steadier, and a much better feeling existed. Domestic trade increased in activity and to this rather than to a foreign demand attributed the more satisfactory situation. Some foreign orders are being taken care of right along but so far as figures are available this year's exports are running way short of last year's heavy shipments, especially on sweetened condensed milk. Exports of this class of goods during January and February, 1921, amounted to but 19,700,000 pounds as compared with over 56,000,000 pounds in 1920. In the case of unsweetened evaporated milk exports were practically the same as last year. Germany continues to receive a large portion of the exports from the United States, getting over 8,000,000 pounds out of a total of 14,000,000 pounds of evaporated milk which were shipped out of the country in February. This was in addition to over 2,000,000 pounds of condensed. Cuba was shipped a larger quantity of condensed milk in February than any other single country, and for the two months the total exceeded over 6,500,000 pounds.

In several respects the March report shows material changes. Manufacturers selling prices covering sales of the previous month show heavy reductions. This applies especially to condensed case goods which dropped on the average about \$1.60 per case to domestic trade and still more to foreign trade. Costs of raw milk for manufacturing purposes were also slightly lower, though not in the same proportion. In fact, prices paid in March were slightly higher than in February by condenseries in certain sections, particularly in the district embracing Ohio, Indiana, Illinois, Michigan and Wisconsin, also in the Northwestern States. In this connection it may be noted that in these same sections prices paid producers by milk distributors were but slightly different than the February prices as compared with an average reduction for the entire country of about 30 cents per cwt.

Fewer condenseries are idle now than were reported a month ago. The number of plants reporting as being in operation in March was 211, an increase over February of 40, and the number temporarily closed was reduced from 45 to 17. No factories reported handling milk for patrons' accounts. This would point to a more satisfactory situation from the manufacturers standpoint. In this same connection stock figures also indicate a healthier condition. Total stocks on March 1, were 25 per cent lighter than on February 1 and almost 50 per cent lighter than March 1, 1920. Unsold stocks showed a similar reduction, and at the same time unfilled orders while not excessively large were almost double those of the previous month.

## Organize Orange Jam Factory

The Citricube Company, capitalized at \$100,000, has been organized at Anaheim, Calif., to manufacture orange jam in cube form



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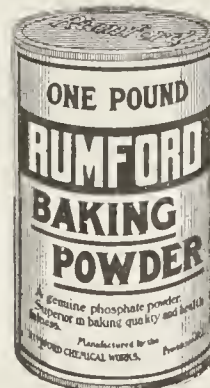
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insure whiter, sweeter and lighter cake and bread—it raises the baking just right, and adds to the nutritive value, as it restores phosphatic elements equivalent to those which fine wheat flour loses in the process of milling.

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## Less Meat Produced and Consumed in 1920

There was less meat produced, less exported, and less consumed in the United States last year (1920) than in either of the two previous years, although the consumption in 1919 and 1920 varied but little, the great change being in the exports. These and other facts are brought out in a series of tables compiled by the Bureau of Animal Industry, showing the annual status of the meat situation for the calendar years 1907 to 1920, inclusive. The data for each year includes: (1) The total slaughter, which is divided into federally inspected and non-federally inspected, (2) the exports and imports, and (3) the consumption, total and per capita, of each kind of meat and of all meats combined. The same information is given for lard separately from pork.

## Peanut Convention in Chicago on May 16 and 17

The United Peanut Associations will hold their annual convention this year at the Congress Hotel, in Chicago, May 16 and 17, which are the two days preceding the annual convention of the Interstate Cotton Seed Crushers' Association and during the same days that the American Oil Chemists' Society will be in annual convention in the same hotel.

The selection of time and place by the United Peanut Associations is to suit the convenience of their many "crusher" members, who are also members of the Interstate Association. The peanut associations include in their membership peanut growers, shellers and product manufacturers.

## Macaroni Output Increases With Production of Durum Wheat

The large increase in the manufacture of macaroni in the United States in the past two decades has been largely due to the successful culture of durum, a hard spring wheat, in the Northwest. This wheat is particularly adapted to the semiarid northern great plains and the subhumid prairies. Its production has rapidly increased from 60,000 bushels in 1901 to about 7,000,000 in 1903, and rising to 40,000,000 bushels in 1920. The manufacture of alimentary pastes has expanded in keeping with the increase in the production of durum wheat. Production in 1920 approximated 450,000,000 pounds.

## To Resume at Condensed Milk Plants

Gradual resumption of milk condensing for domestic and export trade is in immediate prospect for the Nestle's Food Company. Orders have been issued for placing a number of plants in operation. These include the Nestle's Food Company's plants at New Berlin, Mt. Upton, Walton, Middleville, Oneonta, Unadilla, Ithaca and South Dayton, all in New York. Other plants are being considered until one-third of the total will be buying milk. It is understood that the selection of the plants to be opened will depend on the availability of fluid milk in their vicinity and the price at which it can be secured. The company has 60 plants throughout the country.

## British Dehydrating Machines

A number of British firms are engaged in the manufacture of machinery for dehydrating, and many types covering the field of development in both the rotary cylinder and other patterns have been in use for some time, says a consular report.

Driers and dehydrators are used in the United Kingdom for the drying of milk, potatoes, gelatine, soap solutions, food preserves, pastes, colors, fish, yeast, dyes and blood solutions, as well as the drying of such chemical as alkaline and neutral lyes, tannin extract, sulphate of zinc, salt solutions, colors, pastes, chlorides of barium and sodium, cyanide, nitrates of ammonia and calcium, and caustic potash lyes. Machines are also produced and specially adapted for the drying of such materials as rubber sheets, reclaimed rubber, wood, sugar loaves, whole or sliced fruits, incandescent mantels, and gun-cotton.

## Virginia Court Decides Coca-Cola Case

Another case of sweeping significance in the right of trade-marks for protection against the imitation or similar name from a competing product is furnished in the decision of the United States Circuit Court of Appeals at Richmond, Va., handed down by Judge Rose in favor of the Coca-Cola Company. It appears that the Old Dominion Beverage Company of Richmond put out a soft drink similar to the well known Coca-Cola and called it "Taka-Kola," although the original product was already well established in the Virginia territory. The Atlanta concern promptly brought action, and the court has declared that the Richmond concern was guilty of infringing on the Coca-Cola Company's trade-mark. This was particularly true because of the similarity of name.

"The two soft drinks, in fact, are so similar in taste, color and appearance that it is doubtful whether the ordinary purchaser can tell one from the other when they come to him unmarked and otherwise unidentified," said the court.

An injunction has been issued restraining further unfair competition, especially with reference to similarity of bottle, name, etc., but the decree does not attempt to prohibit the manufacture of the Virginia product under some other name which does not confuse the consumer.

## An Erroneous Report

The Booth Packing Company, Baltimore, Md., advises THE AMERICAN FOOD JOURNAL that the report that it would sell direct to the consumer is erroneous. "We have never contemplated nor attempted to market our products to the consumer," writes this company. "We have always sold to the wholesale and jobbing trade only and have no intention whatever of changing this method of distributing our goods."

This statement is made in correction of an item which appeared on page 42 of the March issue.

## Sugar Production in France

The quantity of sugar produced in France from September 1, 1920, to January 15, 1921—that is, for the first four months of the 1920-21 sugar-crop year—amounts to 285,375,383 kilos, against 148,653,158 kilos for the same period of the previous crop year.

## Netherlands Margarin Trade Increasing

In spite of generally depressed conditions in the trade in most foodstuffs, there was a notable increase in the exports of margarin from Holland during 1920, compared with the previous year. The increase was significant in that it represented to a considerable extent the development of new markets. The increase also was developed in spite of wide price variations. The expected increase in the trade with Germany did not materialize, since Germany is still unable to buy such foods abroad for the use of its people and is further developing its own margarin industry. On the other hand, Great Britain has taken a very much larger proportion of the output of the great Dutch factories, and the proportion was increasing at the close of the year.

## 1920-1921 Canadian Flour Exports

Canada's shipments of flour to the United Kingdom, United States and other countries from the beginning of the export season on September 1, 1920, to and including February 28, 1921, reached the following quantities and values:

To the United Kingdom, a total export of 1,415,892 barrels to the value of \$15,030,474. To the United States, 905,924 barrels, worth \$9,248,604. To other countries, 1,236,702 barrels valued at \$15,349,997.

## Use New Basis For Advertising Apportionment

A new idea in newspaper advertising is to be tried in the campaign of the Joint Coffee Trade Publicity Committee. Advertising expenditures are to be made geographically in proportion to the contributions to the advertising fund from each district. That is, the amount of money to be spent in each district will be determined by the subscriptions from that district. The copy will have four main purposes: First, to give the public proper instructions in making good coffee; second, to promote the consumption of coffee at soda fountains; third, to furnish proof of the well-nigh universal use of coffee, and fourth, to combat whatever ideas there may be that coffee is harmful.

## Carl Schuster Dead

Carl Schuster, president of Koenig & Schuster, Inc., wholesale grocers, at 380 Greenwich street, New York, died Monday morning, April 5, in his seventy-first year. He was born in Bavaria, Germany, August 8, 1850, and came to this country in 1864. In 1878 he formed his partnership with August Koenig. The business will be continued without interruption by Mr. Staib and Carl A. Schuster.

## Canadian Wholesale Grocers to Meet in Quebec

The annual convention of the Canadian Wholesale Grocers' Association will be held this year at the Chateau Frontenac, Que., on June 21 and 22, instead of in August as in previous years. The change has been made to suit the convenience of the Western members.



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Foods—Drugs—Oils

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March 15, 1921



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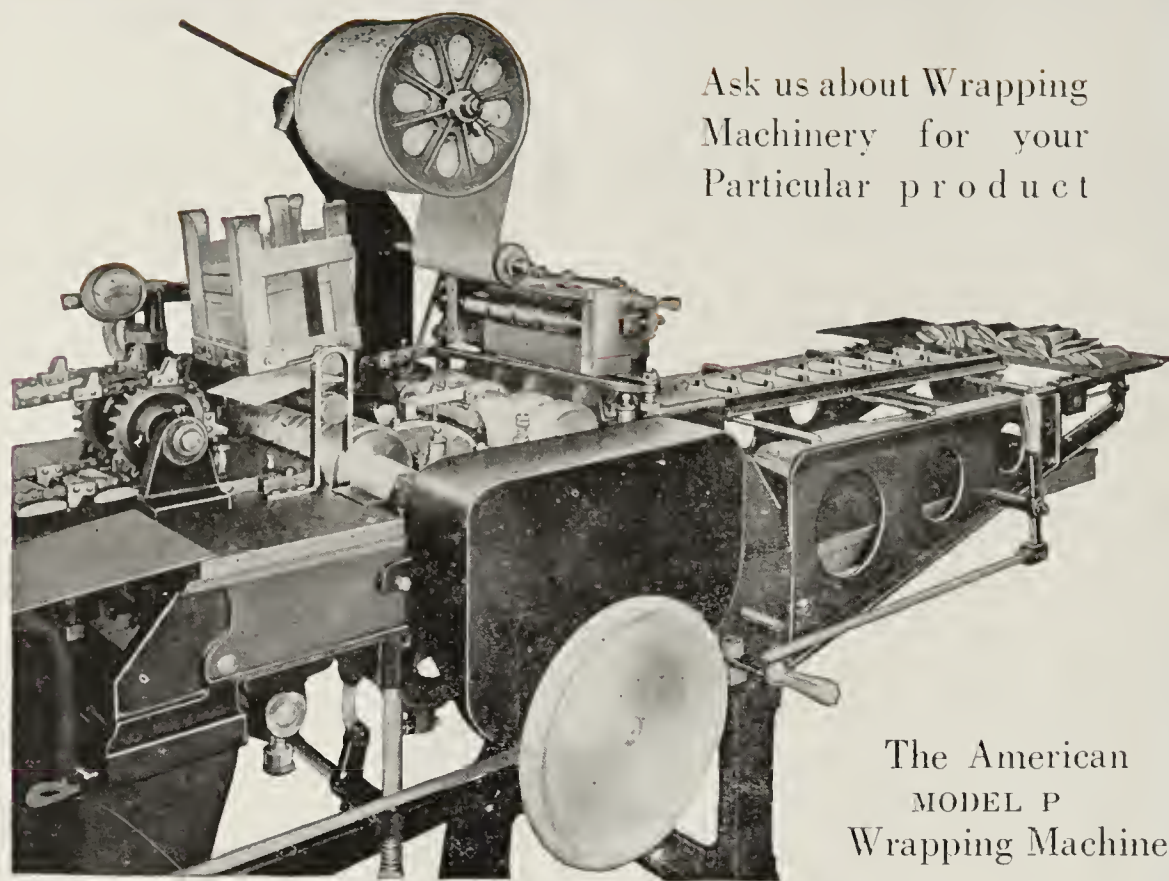
# The American Food Journal

The National Magazine of the Food Trades



DR. ALONZO E. TAYLOR, one of the board of the Food Research Institute to be established by the Carnegie Corporation at Leland Stanford, Jr., University. Dr. Taylor has been Rush professor of Physiological Chemistry at University of Pennsylvania since 1910. During the war he acted in an advisory capacity for the Hoover Food Administration and was in charge of the feeding of French and English in Germany before the United States entered the war.





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Aims to show the adjustment of reliable facts to a rational system of nutrition without insisting upon adherence to technical details that are not feasible in the ordinary administration of the family dietary. The treatment is practical as well as scientific. **\$2.50**

**The Newer Knowledge of Nutrition**—E. V. McCollum, of the School of Hygiene and Public Health of Johns Hopkins University.

An authoritative new book that demonstrates beyond argument the great value of milk and dairy products in the human dietary, and shows how these are to be employed in promoting growth, health and vigor. **\$2.50**

**Feeding the Family**—Sm. W. Rose, Ph.D., Assistant Professor in the Department of Nutrition of the Teachers' College, Columbia University.

This is a clear and concise account in simple everyday terms of the ways in which modern knowledge of the science of nutrition may be applied in ordinary life. The food needs of the typical family groups, men, women, infants, children of various ages, are discussed in separate chapters, and many concrete illustrations in the form of food plans and dietaries are included. **\$2.40**

**A Laboratory Handbook of Dietetics**—M. S. Rose, Assistant Professor of Household Arts, Teachers' College, Columbia University.

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**The Book of Ice-Cream**—W. W. Fisk, Assistant Professor of Dairy Industry of the New York State College of Agriculture at Cornell University.

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**Milk and Its Products**—H. H. Wing, Professor of Animal Husbandry of Cornell.

A scientific but non-technical discussion of the secretion, composition, production and testing of milk, the ferments of milk and their control, determination of bacteria in milk, market and certified milk, separation and refining

of cream, manufacture and marketing of butter and cream, etc. **\$2.50**

**The Commercial Apple Industry of North America**—J. C. Folger, Assistant Secretary of the International Apple Shippers' Association; and Thomson, S. M., formerly Fruit Crop Specialist of the United States Department of Agriculture.

The selection and care of orchards, particularly large commercial crops; extensive treatment of handling, storing and marketing crops. Varieties of apples with their marketable qualities, time of ripening, uses, etc. By-products also discussed. **\$3.50**

**Food Products**—H. C. Sherman.

The first and second chapters deal with the principal constituents and functions of foods and with food legislation; then follow chapters on milk, cheese, and other milk products; eggs, meats and meat products; vegetables, fruits and nuts; edible fats and oils; sugars, molasses, syrups and confectionery; and food adjuncts. **\$2.75**

**Chemistry of Plant and Animal Life**—Harry Snyder, Professor of Agricultural Chemistry of the University of Minnesota.

Discusses the composition of plant and animal bodies, the chemistry of the plant and its food and its growth, the chemistry of human foods and animal nutrition, the digestibility and value of foods. **\$2.25**

**The Book of Cheese**—Thom and Fisk, Investigator of Cheese and formerly of Conn. Agricultural College; Fisk, Assistant Professor Dairy Industry New York State College of Agriculture at Cornell University.

Intended as a guide in the interpretation of the processes of making and handling a series of important varieties of cheese. The kinds here considered are those made commercially in America, or so widely met in the trade that some knowledge of them is necessary. The relation of cheese to milk and to its production and composition has been presented in so far as required for this purpose. The principles and practices underlying all cheese-making have been brought together into a chapter on curd-making. **\$2.40**

**The Food Problem**—Kellogg-Taylor, of the United States Food Administration and Commission for Relief in Belgium and Professor in Stanford University of California; of the United States Food Administration, and Exports Administration Board, and Professor of the University of Pennsylvania.

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**Human Foods and Their Nutritive Value**—Harry Snyder.

Presents in concise form the composition and physical properties of foods, and discusses some of the main factors which effect their nutritive value. Prominence is given to those foods that are most extensively used in the dietary, and to some of the physical, chemical and bacteriological changes affecting digestibility and nutritive value which take place during their preparation for the table. **\$2.00**

**Dietetics for High School**—Florence Willard, B. S., Chairman of the Department of Household Science, Washington Irving High School, New York City; and Lucy Gilett, M.A., Director of the Dietetic Bureau, Boston, Mass.

The purpose of this book is to teach in a manner adapted to high school the application of the principles of nutrition to the feeding of the family with a special emphasis on relative values of different foods, economy in buying, and the importance of good food habits. **\$1.48**

**A Textbook of Domestic Science**—M. G. Campbell, Instructor in Home Economics, Jesup W. Scott High School, Toledo, Ohio.

A practical textbook and guide which is equally suitable for use in the school library or in the home kitchen. Food classification, the hygienic and dietary value of various food, the chemistry of foods and of food preparation, are treated adequately and with careful correlation. **\$1.40**

**A Laboratory Manual of Foods and Cookery**—E. B. Matteson, Instructor in Home Economics in George Peabody College for Teachers, and Ethel M. Newlands, Director of Home Economics in Buffalo Technical High School.

A textbook that approaches the study of cookery through experimental work upon the chemical, physical, bacteriological and biological properties of foods. A soundly scientific and thoroughly practical book and one that will serve either as a text for an independent course in cookery or as a laboratory manual for the general course in foods. **\$2.00**

**The Common Sense of the Milk Question**—John Spargo.

Deals specifically with the problem of producing and marketing clean milk. **\$2.50**

**The Book of Butter**—S. E. Guthrie, Professor of Dairy Industry in the New York State College of Agriculture, Cornell University.

Contains chapters on the History, Composition and Food Value of Butter; Cleanliness; Care of Milk and Cream; Cream Separation; Grading Milk and Cream, and Neutralizing Acidity; Pasteurization; Cream Ripening, From Churn to Package; Flavors of Butter; Storage of Butter; Marketing; Whey Butter; Renovated and Laded Butter; Margarine; Definition of Terms; Testing. **\$2.10**

**Nutrition of a Household**—E. T. and L. B. Brewster.

A practical help in selecting agreeable and nutritious foods, without extravagance. Tabulates ordinary food stuffs to show their relative amounts of nutritive value. **\$2.00**

**Food Values**—Practical Tables for use in private practice and public institutions. By Edwin A. Locke, M. D.

Dr. Locke has collected from many sources exact information regarding the composition of all common foods, and has arranged it in such easily referred to style as to be readily applied to regulation of diets. Cooked, rather than raw foods, are used for food values. Actual weighing is unnecessary. **\$2.00**

**Nutrition and Dietetics**—By Winfield S. Hall, M. D.

A complete treatise on the foods essential for the upbuilding of the human body, with special reference to the diet indicated in disease. The foods needed by the body are discussed, classified and their preparation indicated; the use of foods in the body is taken up, as well as infant feeding and diet in health and disease. Valuable tables included. **\$3.00**

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The accepted method of dieting for each condition of disease amenable to dietetic influence will be found in this work. The scientific principles involved in each case are discussed, with brief tables and summaries of dietetic directions appended. Representative hospital and Government institution dietaries are examined; diets according to age, occupation, weight increasing or diminishing, etc., are included. Full index and cross references. Illustrated. **\$8.00**

**The Economy of Food**—By J. Allan Murray.

A popular treatise on nutrition, food and diet, written for students of domestic economy, cooks, dietitians, housekeepers and institution managers. The science of the chemical analysis of proteins and carbohydrates is presented in practical, easily understood fashion. **\$2.00**

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**The International Cook Book** contains nearly 3500 recipes, arranged in diary form, with a menu for each meal for every day throughout the year. It is indexed for easy reference. The author is Alexander Filippini, author of "The Table," which has reached a circulation of more than 50,000 copies. He was formerly of Delmonico's. **\$2.00**

**Home Canning, Drying and Preserving** is a manual of food conservation by A. Louise Andrea, teacher and lecturer on Home Economics, etc. It is clearly written and practical, and any woman can master the art of canning, drying and preserving food without further help. **\$1.50**

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## THE AMERICAN FOOD JOURNAL

25 EAST TWENTY-SIXTH ST., NEW YORK CITY



# The American Food Journal

The National Magazine of the Food Trades

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J. T. Emery, President

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## The Editor's Column

### WASHINGTON NEWS SERVICE

One of the features begun in the April issue of THE AMERICAN FOOD JOURNAL was a Washington news service. An experienced Washington correspondent has been employed who will keep the readers of this publication fully posted on the latest developments on food subjects either in or out of Congress.

### AN ARTICLE BY MISS LULU GRAVES

The Editors announce that in the June issue there will appear an article by Miss Lulu Graves, professor of Home Economics, Cornell University, and former president of the American Dietetic Association.

### WHAT ABOUT THE PEANUT INDUSTRY?

Another new contributor to THE AMERICAN FOOD JOURNAL, whose first article on the peanut and peanut oil industry will appear next month is Herbert S. Bailey, formerly with the United States Bureau of Chemistry, now with the Southern Cotton Oil Company, Savannah, Ga.

### DEHYDRATION

Two interesting contributions on the subject of food dehydration appear in this issue. One tells something of the several plants in the west now successfully turning out foods by the dehydration method commercially applied. The other is a continuation of the splendid article by Henry Banks, 3d, which was begun last month. THE AMERICAN FOOD JOURNAL probably has published more information on the subject of dehydration than any other American publication.

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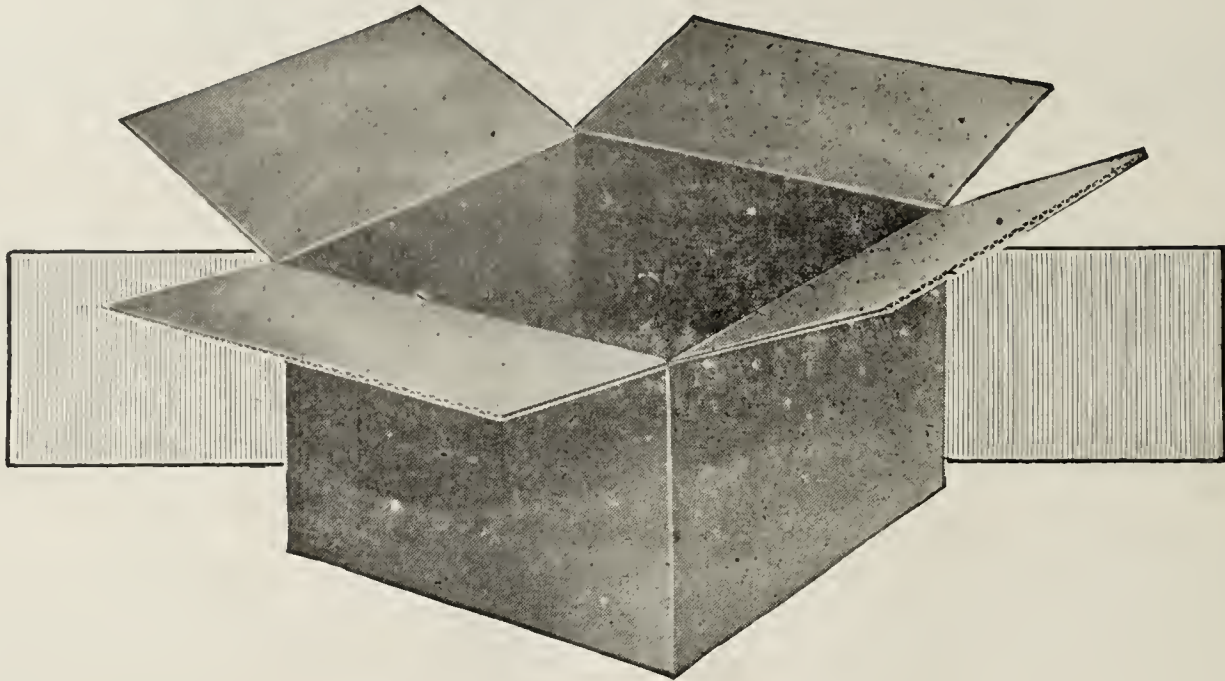
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# The American Food Journal

The National Magazine of the Food Trades

Vol. XVI

MAY, 1921

No. 5



One of the modern dehydration plants, that of the Caladero Products Company at Atascadero, Calif., established in 1918, and now handling a large variety of fruits and vegetables.

## Development of Dehydration

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### Progress of Substantial Character Has Been Made by Several Plants in West

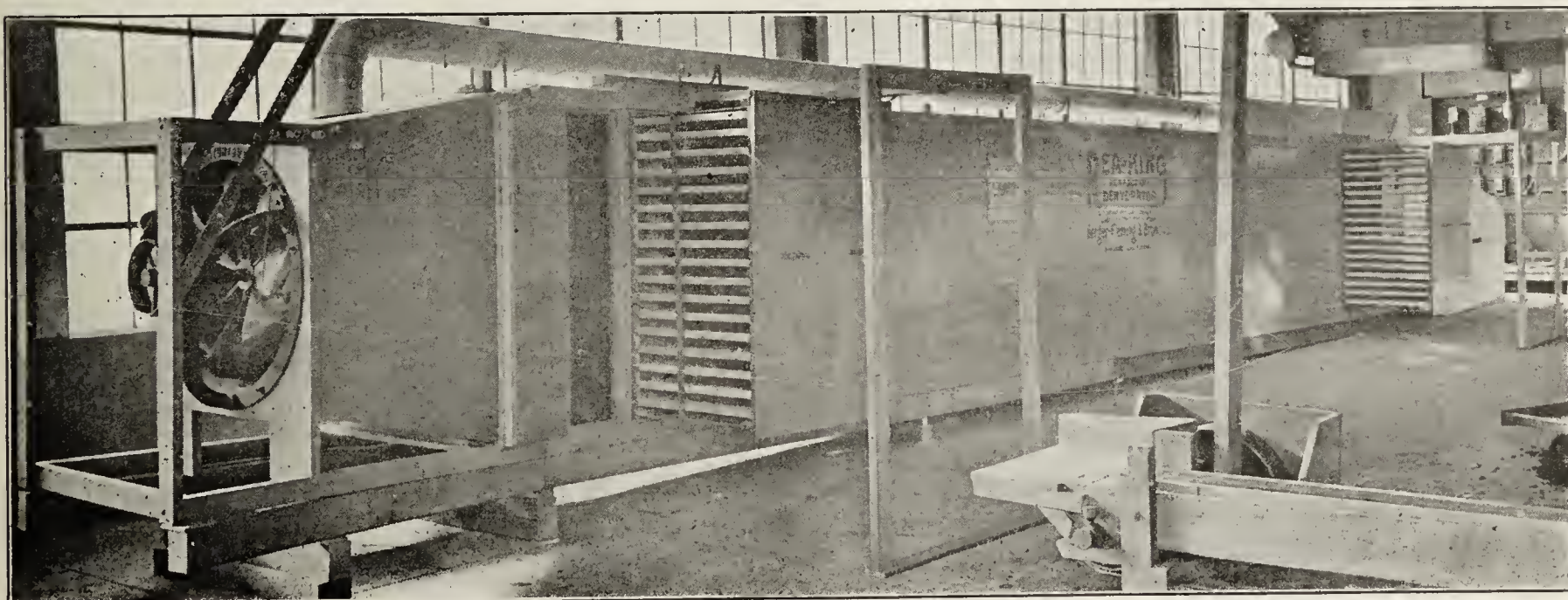
By CHARLES ROSENBAUM

WAR appears to be the great stimulator of methods of food preservation, and just as the Civil War stimulated the canning industry, so the Boer War may be said to have first brought the drying industry to the fore. During the war, the British Army in South Africa was supplied with thousands of pounds of dehydrated vegetables, mixed so as to form the basis of a nutritious and quickly prepared soup.

With the closing of the Boer War, one of the manufacturers was left with approximately 30,000 pounds of such a soup mixture, for which there was no immediate demand in the domestic markets. However, this material was not thrown away, but was put up in barrels, carefully paraffined, and stored. After the outbreak of the World War, the product was sent to the British Army in France and utilized

in the preparation of soups, just as the bulk of the lot had been used fifteen years before. This is an excellent example of the keeping quality of dehydrated products with just a little care.

Modern scientific dehydration is simply the treatment of perishable food products by means of carefully regulated currents of air. The temperature and humidity of the air is properly and completely controlled at all stages of the drying process and only replaceable water is taken away from the product, leaving unaffected the nutritional value of the food. Moreover, if the process is applied while fruits and vegetables are in a state of freshness, the special flavor-giving compounds are preserved intact; hence leaving the flavor which is characteristic of the high-grade fresh product available.



A type of portable dehydration apparatus built under the Hammond patents now in successful use in some of the Western plants.





Preparation department of the Natural Food Company's plant at Fort Collins, Colo. At this plant the product is delivered direct from the farm to the dehydrators.

Since the cellular structure is not changed, the modern dehydrated product will re-absorb or hydrate and return to its normal size and appearance. When cooked, it has the full flavor, appearance and odor of the freshly picked article.

#### Scientific Control Necessary

The highest grade of dehydrated product can, however, only be produced by a process where there is a perfect control of temperature, humidity and the rate of air flow. The scientific control and co-ordination of these three factors, air, temperature and moisture, have been successfully applied, from a commercial standpoint, under what are known as the Hammond patents, which are owned and controlled by the United States Dehydration Company of Denver, Colo.

Under these patents, the product is first placed in the end of the dehydrating tunnel, where the temperature is low and the humidity relatively high, and is gradually advanced to where the temperature is higher and the humidity relatively lower. By this means the moisture is uniformly extracted by capillary attraction without destroying the cell structure. As the product advances into the higher temperature the cells, while contracting, lose the moisture and the product will then stand a higher temperature toward the end of the drying period. Because of the gradual reduction of the moisture content, the cells shrink slowly without breaking down, and the product retains all of its natural flavor, color and food values. The air velocity, temperature and humidity are under complete control.

#### The Plant of the Natural Food Company, Fort Collins, Colo.

The first plant under this system was erected in 1918, during the war, at Fort Collins, Colo. A large variety of vegetables and fruits was successfully dehydrated the first year, including Irish potatoes, sweet potatoes, carrots, turnips, cauliflower, parsley, onions, white and yellow summer squash, peas, pumpkin, cabbage, green beans, wax beans, beets, corn on cob, corn off cob, celery, rhubarb, soup vegetables, raspberries, blackberries, pears, peaches, apples, prunes, bananas and apricots.

At this plant, the product is delivered direct from the farm to the plant. It is then cleaned, placed on automatic carriers, peeled and sliced or cubed by machines. It is automatically dropped on trays, which are placed into trucks or cars, blanched by live steam and then passed into the dehydrating tunnels, where nothing but the water is removed from the product. After being processed for a cer-

tain number of hours (the duration of which depends upon the product) in the dehydration tunnels, the resulting product is then removed to storage rooms for packing and shipment.

The plant has two dehydrating tunnels, which have a capacity of approximately fifteen tons of fresh product a day. One of the interesting features of the plant is the low fuel cost. The furnaces are adapted to burn the cheapest grade of lignite coal. The preparatory rooms are equipped with the best and most modern machines for washing, peeling, slicing, etc., and conveyors and other labor saving machines reduce production cost to a minimum.

The standard of quality maintained has resulted in a steady demand for the products.

#### Plants of the Caladero Products Company, Atascadero, Cal.

The Caladero Products Company, which was established in 1918, operates the largest and one of the most modern dehydration plants in the United States, and handles a very large variety of fruits and vegetables.

The factory building is 480 feet long, 180 feet wide and of stucco construction. Planned for efficiency from receiving to packing room, and with the idea of producing dehydrated foods of the highest quality under perfectly sanitary conditions, this plant is an excellent example of the most approved type of modern factory for the handling of food product.

The largest type of preparatory machines are installed for washing, peeling, slicing, etc., and the products are processed with a minimum amount of handling. Conveying systems save time and labor, and the packing rooms are equipped with machines for rapid and economical packaging of the product. Well lighted, sanitary and vermin-proof storage rooms are provided.

The four large dehydrating units, operating under the Hammond patents, have a capacity of thirty tons of fresh product a day. The fuel used in the furnace is crude oil, and the large volume of warm air required for processing is furnished at a low cost.

The Caladero Products Company sells the greater part of its product by mail direct to the consumer, and has been very successful in this method of marketing. An advertising campaign is now running in magazines of national circulation for "Caladero" brand pumpkin flour, an article for which a large demand has been created.

The company has given particular attention to the pro-



duction of very high grade dehydrated foods, and this policy, combined with the aggressive advertising campaigns that have been carried on, has been instrumental in creating much of the present interest in the use of dehydrated foods, and in the commercial application of dehydration. An additional plant under the same patents has been erected by this company at Arroyo Grande, California.

#### **Plant of the Woodbridge Products Company, Woodbridge, Calif.**

This plant commenced operations in August, 1920, and was primarily planned for the dehydration of grapes.

Muscats, Zinfandels and Tokays were processed under the "Hammond patents," which are also employed at this plant, at the rate of thirty tons of fresh fruit a day. The plant operated continuously twenty-four hours a day for the entire season, and delivered dehydrated grapes of exceptionally high quality.

The plant was so successful in the handling of grapes that arrangements were made to continue its operations, and the processing of pumpkins followed the closing of the grape season. Pumpkin flour produced from dehydrated pumpkin was successfully made and the entire output contracted for in advance of production.

The dehydrating system consists of five tunnels. Two especially constructed furnaces are installed for the production of large volumes of heated air at low cost.

#### **Plant of the Robert Noble Estate (Inc.), Boise, Idaho.**

The Robert Noble Estate (Inc.), completed its plant and began operations in the latter part of 1920. It was built in the Boise Valley primarily to take care of the prune crop grown in the vast orchards of the company. The plums are delivered direct from the plantation to the plant, where twenty tons of fresh product are dehydrated per twenty-four hours. No chemicals whatsoever are used during the process of dehydrating the prunes or vegetables.

This plant is approximately 100 feet by 100 feet and has four dehydrating tunnels licensed under the Hammond patents. The quality of the prunes when dehydrated has been pronounced superior to any produced in the valley, where the plums have heretofore always been dried under the lye dipping and stack drier system. The president of the Estate in commenting upon the quality of the prunes turned out by this process says:

"The product is excellent; superior, in fact, to anything we have seen."

#### **Portable Type Dehydrator**

A licensee of the United States Dehydration Company has perfected what is known as the "Portable Type Dehy-

drator" under the Hammond patents. This dehydrator is 60 feet in length, 4 feet in width and 6 feet in height, and has an estimated capacity of 2,250 to 3,000 pounds of finished product per twenty-four hours. It is of great help to the farmer and orchardist as an insurer against unfavorable weather and a conservor of surplus products for which no present market is available. The dehydrator is shipped knocked-down and can be erected by four men, ready for operation, in from eight to ten hours.

This small machine is the keynote of simplicity and skilled labor is not necessary for its operation. The only requirement is the ability to read the thermometer correctly and maintain the proper temperature. Only one man is needed to operate the machine.

The practicability of this small portable dehydrator is demonstrated by the recent threatened losses to the 1920 prune crop near Edenvale, California. These dehydrators were immediately put into operation and huge quantities of fruit, that had laid on trays for days and failed to dry in the sun, were run through and successfully salvaged. Some fruit that had already begun to darken was processed, the meat restored to its natural color, and a high grade product delivered to the packing house. In this manner, fruit that would otherwise have become a total loss was dehydrated, and a marketable product of high quality delivered to the packers' warehouses.

Dehydrated product keeps indefinitely, occupies comparatively very little space, and can be packed and shipped to the most isolated regions without deterioration.

Every year lack of transportation facilities occurs and fruit and vegetable growing districts suffer. Too much is dumped on the market at one time and prices go down, with the result that large quantities are left to rot on the ground. With the rapid progress of dehydration, as illustrated by these modern food plants, there will soon be no need to flood the markets, oversupply the demand and lower prices; there will be no rotting of fruits beneath the trees or unharvested vegetables. All these perishable products will be dehydrated and stored until the transportation facilities are opened and there is a demand at fair prices. It is well known that a large percentage of all perishable fruits and vegetables in the United States is wasted annually on the farm, at the loading station, in transit, and through over-production in certain districts. Dehydration saves this waste.

It is believed by those closely in touch with dehydration that it is at the beginning of a development which will soon rival the great canning industry.



Packing department of the Natural Food Company's plant. Production cost in this plant has been reduced to a minimum through the use of the most modern equipment of all kinds.



# Commercial Possibilities of Dehydration

## Various Methods of Drying Foods, Including Description of Mechanical Apparatus

BY HENRY W. BANKS, 3D  
Consulting Engineer

**Editor's Note.**—This is the second article by Mr. Banks. The first was published in the April issue of *The American Food Journal*.

AS for the methods of drying, so many variations in design, in principle, and in heat application have been introduced, that only what may be called the main divisions will be described here. It may be said that no one method is universal in its application, and that each has its use. Only by considering questions such as I have suggested in the previous article, can one be reasonably sure of the best mechanical method of producing a given result, under certain specified conditions.

First, historically at least, comes sun drying. Here radiant heat from the sun itself and heat conducted from objects on which the material rests, raises the temperature and permits the surrounding air to carry off the moisture. The method is cheap and in certain climates answers the purpose, but insect life usually has free access to the fruit drying, and not all materials can be so treated. The method is necessarily slow. Kiln drying generally refers to a method in which, for example, apples are laid on a screened floor under which heating appliances are built. The mass of apples is stirred up now and then, during the drying. This is naturally a rather slow method. The products are fairly familiar under the name of evaporated or dried apples.

### Atmospheric Dryers

What are usually called atmospheric dryers consist essentially of a blower, a heating coil, chambers in which the material is placed on woven wire screens, and an exhaust for the moisture laden air. They are constructed in many different ways and with numerous refinements, depending on the use to which they are to be put. Thermostatic regulation is common in such machines, as are devices for regulating the amount of humidity in the stream of air. The velocity with which the air passes over the drying trays is subject to considerable variation. This again is dependent largely on the results to be obtained, and this question requires further study and research. Considerable data has already been compiled in this connection.

In all these atmospheric dryers it may be stated that the governing principle is this: heated air will carry much more moisture than cold. On a summer day the air is saturated at a moisture content of 10-15 grains per cubic foot, but a cubic foot of air at 212 degrees Fahrenheit will carry 265 grains of moisture. Let us take for example the case of air containing 12 gr. per cubic foot, and heated to 130 degrees F., passing over a quantity of moist vegetables. Considerable water is absorbed by the air, exercising a very large cooling effect on the entire system. One form of dryer overcomes uneven drying from this cause by running the air through a number of trays in series, then over a heating coil which restores the air to its original temperature when it again meets a series of trays of the vegetable product. The principle can evidently be extended almost indefinitely. A great economy of steam and very even drying throughout the system are claimed for this method.

All atmospheric systems should be carefully insulated so as to prevent in every way possible the loss of heat. If the exhaust from such a system passes directly into the atmosphere it is evident that much heat has been expended for no purpose. The most common way to effect economy in this case is to recirculate a large portion of the exhaust

through the system. This brings us again to the problem of humidification, for this exhaust air contains much moisture. This can be worked out with the utmost economy in cases where the exact temperature and humidity have been determined carefully over the whole drying time for a particular substance. An ideal atmospheric dryer, then combines a system of heating air with one which circulates it at the most suitable velocity over the substance to be dried. At the same time it uses over again as much of the exhaust heat as possible together with humidity already removed from the product.

Where one substance demands high humidity at the start and dry air at the completion of the drying period, another may give better results with dry hot air at the start and lower temperature with greater humidity at completion. It must always be kept in mind that these materials do not differ only in moisture content, but also in cellular structure, texture, and in the chemical nature of their flavors and colors. It cannot be emphasized too strongly that each vegetable, fruit, meat or fish presents a distinct subject for study. A perfect system and a perfect set of conditions for all food products is impracticable.

### Drying with Moist Air

While on the subject of recirculation of air it might be well to refer again to humidification. Drying with moist air does not sound reasonable, but we do not mean saturated air—simply air containing a fairly large percentage of the amount of moisture necessary for saturation at the temperature employed. Another fact to be noted in this regard is that moist air has a higher specific heat than dry. Drying with moist air is not in the least paradoxical. Where the recirculation of air from the product does not produce sufficient humidity, a jet of steam or other suitable means for admitting additional moisture may be introduced in the system. When the recirculating air becomes moist enough this steam jet may be shut off. It is clear that adequate control must be exercised over all these factors and that only by careful preliminary study can such control be properly applied. Proper results can rarely be obtained by guesswork.

So far we have considered atmospheric dehydrating systems in which heat is applied to the material through the medium of the air which passes over it—a combination of conduction and convection. By placing heated coils in such a position that their heat is radiated to the material, a third method of introducing heat to this material may be employed. This may help to solve some of the problems arising from surface drying. Dryers have been constructed which utilize this principle. When one considers that radiation increases as the fourth power of the absolute temperature, it would appear that this method of applying heat is susceptible of further extension. In atmospheric systems where "booster" heaters are not employed, even drying is secured by deflectors or baffles by which the stream of air can be distributed throughout the system. This adjustment is usually determined by experiment. It may be added that some atmospheric dryers are operated slightly above or slightly below atmospheric pressure.

### Tunnel Type of Dehydrator

Another modification of this type consists of a long tunnel through which trucks carrying the drying trays move in a direction counter to the warm air stream. The dryer material in this case meets the hottest and driest air, while material freshly admitted meets air considerably cooled



and carrying much humidity. Often this is exactly what is required, as in the drying of sheets of gelatin, and the fact that the process is continuous is in its favor. Continuous drying can also be secured by belt conveyors, usually of woven wire. The most common arrangement of these belts is one in which the material after traveling the length of an upper belt, falls from it onto one traveling in the opposite direction. The number of these superimposed belts and the speed of travel is regulated so that moist material is delivered to the machine and comes out dried to a predetermined water content. A variety of air circulating systems may be applied here as in all atmospheric dryers. Certain finely divided materials may be dried in a current of air without any application of artificial heat whatever, and in some cases this method is valuable. The apparatus may be constructed rather simply and without regard to heat insulation.

#### Drying of Liquids

The drying of liquids presents different problems, there being several highly satisfactory methods. A common one is to admit the liquid through small jets so as to produce a fine spray. This spray meeting a current of warm air loses its moisture almost instantly, and is recovered as dust or powder. Liquids are also handled in vacuum systems. In this case a heated roller picks up a film of liquid, which dries rapidly under the reduced pressure and is scraped off continuously by a knife. A flaked material results. The roller and its various attachments are of course entirely enclosed in a chamber in which a high vacuum is maintained. Both of these methods are used to dehydrate such foods as milk and eggs, and both may be made continuous. Liquids are also dried in flat pans in the usual types of atmospheric dryers, and no rotating heated drums where vacuum is not employed.

#### Vacuum Methods of Drying

The vacuum methods of drying fruits and vegetables merit separate discussion, in that these methods seem to be less familiar than those described above. The apparatus consists essentially of three parts: A heavy cast iron chamber containing hollow steel shelves capable of being heated by steam, hot water, or electricity; a condenser and trap to collect the condensate; a vacuum pump to exhaust the air from the chamber and to maintain a high vacuum on the system. Such installations are common on a very large scale in the dye industry, rubber industry and a number of others. The chamber itself is a heavy casting of close grained iron. A heavy door is hinged or swung open for loading or unloading. This presses against a rubber gasket when closed. In some large units two doors at opposite ends of the chamber are employed. This facilitates loading and discharging the material. The shelves are of welded sheet steel, internally strengthened with staybolts, and so baffled that the circulating water or steam passes through all parts of them. The material to be dried rests on flat pans or screens which slide in, making thorough metallic contact with the flat shelves. Heating is mainly by conduction from the metal trays, and partly by radiation from the under surface of the next shelf above. A pipe of ample size leads from the chamber to the condenser which is usually of the surface type, though the barometric are not unknown in these installations. Reciprocating pumps are used almost entirely, and pumps of the two stage type are fairly common, though a single stage pump in good condition will ordinarily give a sufficiently high vacuum.

In food dehydration with vacuum shelf dryers the circulating medium is generally hot water. By thermostatic control it can be made practically fool-proof, and overheating rendered impossible. Low-pressure steam may also be employed by "cracking" the steam line into the vacuum line. The vacuum method has the disadvantage of rather expensive installation, and of being essentially an intermittent process. However, the efficiency of operation can be made very great, as virtually all the heat is utilized to evaporate moisture from the food, and no large volume of air is heated. The power required is not great. One of the most important advantages is that the dehydration

takes place in the absence of air. This freedom from oxidation is clearly shown when vegetables containing an active oxidase, such as potatoes or apples, are treated by the system. No blackening or darkening occurs. In most drying methods pre-treatment with steam or sulphur dioxide is necessary to destroy this enzyme so that a white product may be obtained. In the opinion of some, "blanching" or steam treatment may be advisable with such vegetables even in vacuum dehydration, as no darkening will then occur when the products are later soaked in water. But the fact that the enzyme can retain its activity in this way is good evidence of how little such delicate substances are effected by vacuum dehydration.

#### Dehydration of Meat Products

It presents a splendid method for the dehydration of meat products. Even large steaks and chops may be handled without oxidation and dried throughout. The fats remain white and are not melted. Meat in cubes has been dried in this way and shipped for a long distance in common wooden cases lined with wrapping paper. Excellent dishes were prepared from it months later. The cubes may be ground to a powder which makes very good hash. This product is essentially raw meat with the water removed. A temperature of 130 degrees F. is usually employed. Analysis of meat dehydrated in this way shows a content of ammonia, non protein nitrogen, creatine and creatinine and purine bases which is virtually that of raw meat. Fish, oysters, clams, lobster meat, shrimps and similar easily putrified foods give noticeably fine products. The usual procedure is to dry meat to about 35 per cent of its original weight. On conditioning, about 5 or 6 per cent of additional moisture is lost, and no development of bacteria occurs. The increased salt concentration of the meat juices no doubt exercises some preservative action.

Most fruits and vegetables can be dehydrated in this way at higher temperatures than meat, which must be kept below the melting point of its fat and the coagulation point of its proteins. As in all other systems, the method of cutting the vegetable or fruit exercises considerable influence. It may be stated in general, that thin slices cut across the grain will give the most satisfactory results. In this method, too, drying must not proceed too far, or the product will not refresh in a natural manner. The maximum temperatures which may be employed here, with various foods, requires further study; work along these lines is in progress both with regard to atmospheric and vacuum methods. The question of temperatures used in handling meat is practically limited by the conditions mentioned above, and has been accurately determined. Fish fats as a rule have very low melting points, and no doubt slightly different conditions must be met in this case. The amount of water present and the chemical character of the substance under consideration are not the only factors. It is clear that a ground up substance carrying moisture largely on its surface will dry at a different rate from one which is in large dense pieces, saturated throughout.

To return for a moment to the finished product, it may be said that the chief source of trouble is from insect pests. The Indian meal moth is one of the worst of these, especially in warm climates. Careful screening of the plant and the utmost care in handling the material, are the principal remedies. Infestation of plants by insect pests must be avoided in every way. Materials coming into the plant should be carefully inspected. Fumigation with hydrocyanic acid may be resorted to in serious cases, but this necessitates shutting down for a couple of days, and may involve danger to the employees unless done by experts.

I have tried to outline the most important methods now employed in food dehydration, and to describe some of their salient features. Much interesting information has of necessity been omitted and much that is familiar to the majority of people has been included for the sake of continuity. I have purposely avoided direct reference to the numerous splendid workers in this field, for to include all of them and describe their work in detail is beyond the scope of this article.



# Potato Flour, a New American Industry

## Domestic Manufacturers Now Provide Product Formerly Imported Annually From Germany

BY OSCAR JAMES VOGL

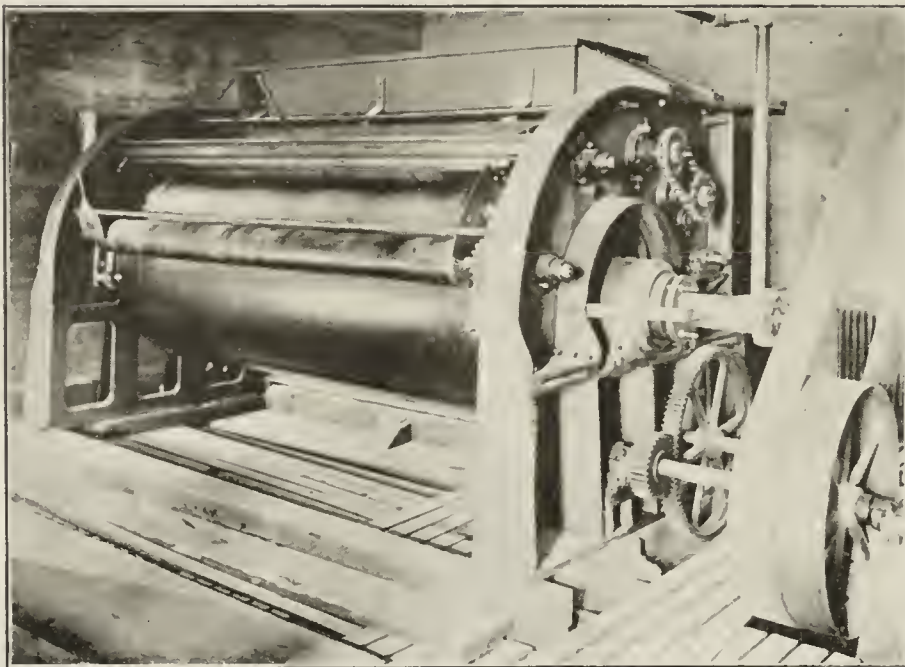
**P**REVIOUS to the war, every ounce of potato flour consumed in the United States and Canada was imported from abroad. Similar to the dye industry, it was one of Germany's monopolies. The Government statistics show that during the twelve months preceding the war, 25,000,000 pounds of this flour was imported into the United States. When the Food Administration encouraged the use of substitutes, potato flour mills sprang up all over this country, manufacturing mainly potato starch flour or uncooked potato flour, all of which found a ready market at a good margin of profit. In fact the demand exceeded the supply. Prior to that time our food laws, although strict on every point, failed to define potato flour, thereby giving unscrupulous manufacturers and war profiteers an opportunity to merchandise any form of ground up potatoes or plain potato starch as pure potato flour.

With the permanent establishment of the industry in this country there naturally came the necessity of clearly defining what should and what should not be considered pure or genuine potato flour, and so on August 18, 1915, the Bureau of Chemistry of the Department of Agriculture, under the authority of the Pure Food and Drugs Act of June 30, 1906, ruled that the term "potato flour" cannot be applied to a product containing starch alone, but only to a finely divided or powdered product containing fat, fibre, and ash constituents from the edible portion of the potato.

### How Steel Interests Laid Foundation for New Food Industry

While the spoils of war were being divided by the various so-called potato flour manufacturers of America, a Russian chemist employed by a Pittsburgh steel corporation, experimented in various ways to produce a concentrated potato for the soldiers in the trenches. At about the same time an Idaho farmer of German descent organized a company consisting mainly of farmers and headed by a banker, who at that time acted as Hoover's Food Administrator of that State, for the purpose of manufacturing a quality potato flour made from cooked, sound potatoes. So it came to pass that in 1917 the first genuine potato flour mill was erected in Idaho Falls by the Food Products Company, of Boise, Idaho. Much credit is due to one Carl Feldhusen, the first manager, superintendent and general salesman of this mill, through whose untiring efforts and constant faith the stockholders' enthusiasm was kept at a pitch, permitting the production of a quality potato flour in this country.

The enterprise made only slow progress, and when the war came to a sudden close on November 11, 1918, potato flour sales took a decided drop, making the Idaho farmers rather skeptical and discouraged. At the same time the machinery, plant and equipment purchased out of patriotic motives by the Pittsburgh steel interests under the guidance of the chemist, Dr. Rothberg, became useless property.



Falk flaking machine for manufacturing potato flour. The machine consists of a single drum, which is steam-heated; the cooked potatoes passing over it are dried into flakes

addition to the one in Idaho, while farmers' co-operative plants are operating in various potato growing sections and more are being organized.

### What Made Germany the Leader of This Industry

No matter what our national feelings may be towards Germany, when co-operation and government subsidation is under discussion, our minds must turn admiringly towards the land of ruthless warfare.

The potato being for Germany what Indian corn is for us, namely the main staple food crop, it naturally received the greatest consideration from the economists, agriculturists and scientists of the land. In order to save the amount of potatoes going to waste annually, the German scientists developed dehydrating machines reducing the average 75 per cent moisture of these tubers to eliminate spoilage, also solving the transportation problem, since the difference of shipping cost between the whole potato and the dehydrated one was thus reduced from five to one.

All discoveries, scientific theories, no matter how carefully calculated, are naught, if not supported by the producers and made attractive to the consumers.

Imperial Germany understood quite well how to organize the resources of its country. It interested first of all the producers or large land owners, popularly or unpopularly called junkers, in organizing co-operatively owned potato dehydrating or flaking plants. Of the 1100 plants in Germany today, 87 per cent are co-operatively owned, while only 13 per cent are strictly industrial enterprises. This alone gives the industry a stability which it can never hope to attain in this country, unless the co-operative movement grows more rapidly in the future than it has in the past.

The Government, wishing to encourage this industry which only not utilizes the usually wasted undersized potatoes, but also prevented loss from spoilage caused by improper storage and the large amount of moisture contained in the potato, gave special freight rates on so-called factory tubers going to the mill and on the finished product coming from the plant.

With Government owned railroads and co-operatively

The first real American potato flour corporation is therefore the result of a meeting between a Western farmer and a Pittsburgh chemist, both of whom have emigrated to the land of opportunity from the country of exact science. Supported by powerful capitalists, the first American potato flour corporation was founded. The mill at Idaho Falls was purchased, enabling the farmer stockholders to realize one hundred cents on the dollar for their hitherto hopeless stock interest.

With proper management, national advertising, merchandising, standardization and co-operation, the business grew so that today one corporation operates mills in Michigan, Colorado, Maine, Wisconsin and Minnesota, in



owned mills, every obstacle hindering the growth of the industry was removed. It is therefore no wonder that Germany, producing nearly six times the tonnage of potatoes that does the United States, a little over four times as much as France and one-half times as much as its nearest competitor, Russia — gained control of the world market in manufactured potato products. While in yield per acre, it is outclassed by Belgium, Ireland, England, Denmark, Norway and Switzerland, it raises two and one-half times as much per acre as does the United States. These statistics being based on pre-war figures will show slight variation today for potato production has been increased in all countries cultivating this tuber.

#### Japanese Invasion

With its usual sagacity and shrewd politeness, Japan bowed itself into the potato industry during the war. Copying German efficiency, co-operation, and Government subsidization, it rapidly replaced German potato flour and especially potato starch in the world market. Owing to its cheap labor cost it played havoc with many manufacturers in the United States and Canada, whom it could invariably undersell.

Failing, however, to produce a high grade product, Japanese merchandise is being gradually eliminated from the markets where quality takes precedence over price.

#### Importance to Agricultural Interests

Using as its raw material the usually wasted No. 2 undersized sound potatoes, 50,000 bushels of which are annually a loss to our farmers, this new industry is naturally of great interest and benefit to the potato growers of America.

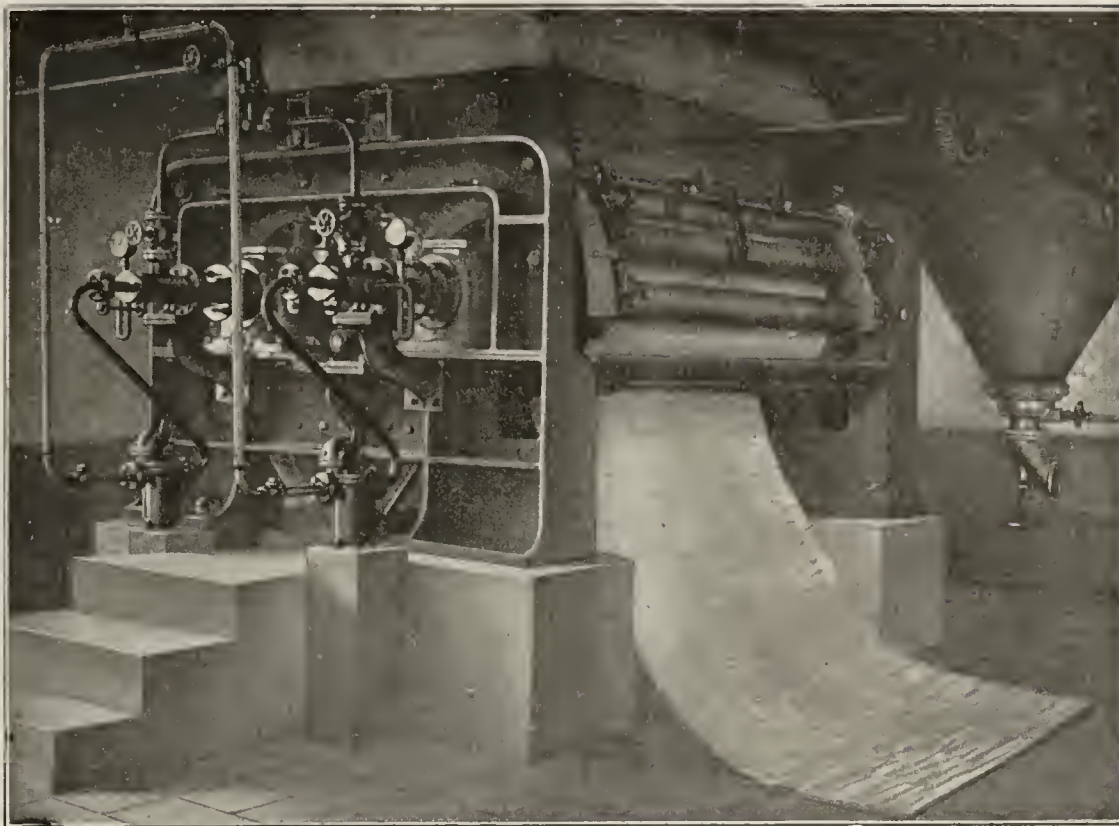
The mills now contract with the farmers or buying exchanges for their No. 2 potatoes, the only provision being that these potatoes must be free from frost bites, blight, rots, bruises and disease.

This gives the farmers a revenue for formerly wasted produce, makes it possible for them to sort their crop and give more care to the table potatoes that ultimately reach the consumer. Every potato growing state in the Union has strict grading laws enforced by the powerful potato growers' associations. There is a constant tendency to raise the standard, thereby giving the consuming public better potato value for their money.

By helping the potato growers find an outlet for these unsalable No. 2 tubers, the potato flour industry indirectly helps reduce the high cost of living, for the farmers can afford to sell their choice sorted No. 1 grades at a more reasonable figure if they are sure of disposing of the 15 per cent undersized potatoes. In 1914 only 1 per cent of 410,000,000 bushels of potatoes harvested in this country were used for the manufacture of potato flour and starch, while Germany used that year 10 per cent of her 1,674,000,000 bushels of potatoes for manufacturing purposes.

#### Milling Potatoes into Flour

The first machines to produce a fine flour out of potatoes were built in Germany in 1903, but not until 1907 did it develop into a real industry there. Today she has over 35 different systems in operation. Professor E. Parow of Berlin has carefully compiled records showing the various methods used and giving exact comparisons on the grades and varieties of flour produced through these different devices.



A German type of potato flaking machine, showing discharge of snow white potato flakes

In the main points these German flaking machines resemble one another. The American built flakers are the result of careful study of foreign devices best suited for our needs and supplied with improvements resulting in the production of a more uniform and lighter color flour.

The stock is handled by mechanical means entirely, from the minute it enters the mill.

First the potatoes are thoroughly washed to remove all dirt and stones. Then the clean potatoes are taken to the peeler to remove the brown outer skin, but leaving the inner skin, under which the valuable

mineral salts are located intact. This peeling process is a friction device which is gently applied to prevent reducing the mineral salt content in the finished product. Here skill and experience in handling stock count most.

From the peeler the potatoes are taken on a conveyor into a steam cooker where under steam pressure they get the same treatment as home cooked potatoes with the jacket. From here they pass into a mashing machine which feeds them as a solid mass into a flaking device. This skillful operation again requires expert attention for either too much heat steam or improper adjustment of the rollers will produce an inferior product.

The machine consists of two large steam heated drums, which rotate rapidly against one another. The mashed potatoes are fed in between these two drums and are discharged in the form of thin white flakes. The dehydrating or drying process is herewith completed and the white, fluffy and appetizing flakes are then ground on rolls and bolted through silk cloth, so the finished product is of the same consistency and fineness as the very best patent flour, with which it is blended for baking purposes.

Machines vary in size and consume accordingly from 1200 to 3000 pounds of potatoes per hour. It requires on an average five pounds of cooked mashed potatoes to produce one pound of flour.

The rich cream colored flour is then automatically weighed and fed into paper lined bags holding 100 pounds each. These are stored in immaculately clean and airy warehouses until they are loaded in cars and shipped to all parts of the country for distribution.

Every well equipped mill must be provided with large storage warehouses in order to take care of the incoming potatoes. They are usually harvested in a short period but furnish the raw material for a mill operating on an average of eight months in the year.

#### French Flour is Made Differently

The French, who are masters in the art of producing fine food products, employ a different process to produce potato flour known by the name of its inventor, as "System Challet."

The potatoes are thoroughly washed in a big trough, next cooked in a steam cooker for 40 minutes, then cooled off on an asphalt floor, where they remain 12 to 18 hours.

These cold potatoes are then mashed by passing them over rollers set 20 millimetre apart. This process mashes the potatoes and breaks the skin. The mixed mass falls on two brass rollers set two millimetre apart and provided with slanting four millimetre wide holes. Here the smooth

(Continued on page 30)



# Sugar and Sugars

## A Discussion of the Various Forms in Which Sugars Occur and Their Commercial Possibilities

By J. J. WILLAMAN

Minnesota Agricultural Experiment Station

THE granulated sugar of commerce has probably attracted more attention during recent years than any other food substance. This is partly because sugar experienced more sensational changes in price than most common commodities; partly because there is an unmistakable increase in the consumption of sugar, at least in this country; and partly because there is an actual slight world shortage, due to the destruction of the factories in Europe. The first and last items will soon disappear; the fluttering of sugar prices will calm down, and the world shortage will be made up. But what about the increased consumption? That is not likely to cease. We are told that we have a national weakness for sweets, and probably we have. But Slosson says, "We think we eat sugar because it is sweet. But we do not. We eat it because it is good for us. The reason it tastes sweet to us is because it is good for us. So man makes a virtue out of necessity, a pleasure out of duty, which is the essence of ethics."

Instead of trying to discourage the increasing consumption of sweets, thoughtful men are asking, "Are we dependent on granulated sugar? Aren't there other possible forms of sugars that could be developed?"

The following article attempts to answer these questions. It also attempts to give to readers a better idea of that whole group of substances known as sugars. For



Sorghum sugar cane. This is a valuable sugar crop in many parts of the country, and it bids fair to become still more valuable because of recent developments in sirup-making processes.

there are many kinds of sugars, in spite of the fact that when we say "sugar" we almost invariably mean the crystallized sucrose from the sugar cane or the sugar beet. Let us discuss briefly the commoner kinds of sugar, their characteristics, occurrence, use, and methods of manufacture.

The sugars belong to that group of chemical substances called carbohydrates. They are those carbohydrates which are soluble in water, taste sweet, and form crystals. Other carbohydrates which are not sugars are starch, cellulose (as cotton, paper, and linen), dextrin (as the mucilage on postage stamps), and gums (as cherry and spruce gum). The common sugars are divided into two classes: (1) the simple sugars, as monosaccharides, and (2) the disaccharides. The sugars of the first class are glucose, fructose, and galactose. Those



A milk sugar factory. The female mammal is the only known maker of this sugar. We hire the dairy cow to make most of ours for us out of pasture grass and mill feeds.



of the second group are sucrose, maltose, and lactose. It should be said that there are many other different sugars, but the above are the only ones of considerable importance. We shall consider each one separately.

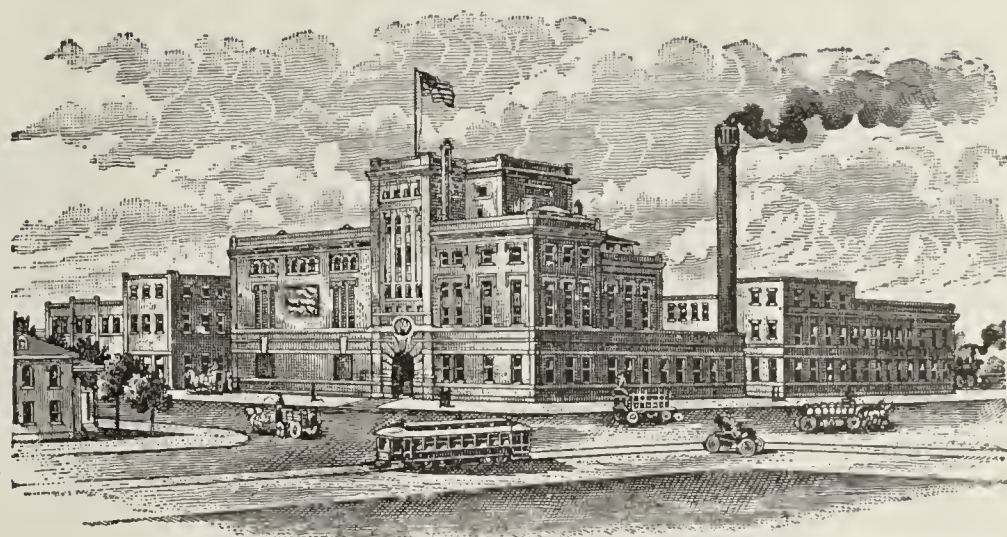
### Glucose

Glucose, also called dextrose, grape sugar and starch sugar, is abundant in practically all fruits, in many vegetables, in honey, in sorghum sirup, and in molasses. It is this sugar which often crystallizes on the outside of prunes and raisins in the form of a brownish powder. Also it is crystals of glucose which form in honey when the latter "sugars out." Glucose has the distinction of being the only form of sugar which can be burned in the tissues of higher animals. This means, of course, that when the other sugars are eaten they must be changed into glucose. We shall see subsequently how these changes are brought about in some cases.

The commercial form of glucose is corn sirup. It is so called because in this country it is made almost entirely from corn starch; in Europe potato starch is used. The method simply consists in separating the starch from the rest of the corn grain and then heating the starch with very dilute hydrochloric acid. This treatment brings about a chemical change in the starch called hydrolysis. The hydrolysis goes in three stages: first, dextrin is formed, a gummy, non-sweet substance; this changes to maltose, a slightly sweet sugar described below; and finally, the maltose is converted into glucose. All three steps take place at the same time. The process cannot be allowed to go on until all the starch is changed to glucose because the resultant sirup would crystallize. Therefore, the chemist watches the process carefully, and stops it when a certain amount of dextrin still remains, since this holds back the crystallization of dextrose. Corn sirup has then the following average composition:

Dextrin .....	37	per cent
Maltose .....	12	" "
Dextrose .....	35	" "
Mineral matter .....	0.4	" "
Water .....	16	" "

If, however, dry glucose sugar is wanted, the hydrolytic process is carried to completion, and the resultant sirup caused to crystallize. This sugar is commonly called standard 80 sugar and starch sugar. Since corn is our greatest cereal crop, and since the manufacture of the sirup is a comparatively cheap process, there will al-



This factory once malted grain and made it into beer. Now it malts the grain and makes it into maltose sirup, a new sugar product.

ways be an abundance of this sirup available at low prices. Its chief drawback, as is well recognized, is its low sweetness.

### Fructose

Fructose, also called levulose and fruit sugar, the next simple sugar in our list, differs considerably from glucose in many of its properties. It is very sweet; in fact, it is the sweetest known sugar, being over 50 per cent sweeter than cane sugar. It crystallizes with great difficulty, always remaining in a sirupy form, thus differing from glucose and cane sugar. It is found together with glucose in most fruits and vegetables, and is very abundant in honey, giving the latter its intense sweetness.

Fructose is not a commercial sugar of any great importance. A limited amount is sold to diabetic patients, who can utilize this sugar somewhat better than they can other sugars. Honey is the nearest approach to a fructose product, containing about 40 per cent of this sugar. The principal reason why fructose is not on the market is the fact that there is no convenient abundant source of it. It is invariably mixed with dextrose and sucrose in plant materials. There is, however, a theoretically possible abundant source of it in the tubers of the Jerusalem artichoke. These tubers contain about 12 per cent of inulin, a carbohydrate similar to starch, but which on hydrolysis with dilute acid produces fructose instead of glucose. It is apparent that if a commercial method could be found for manufacturing levulose sirup from these tubers, a process of tremendous value would be at hand. The artichoke grows very readily; in fact it is a bad weed in some sections, and it gives enormous yields, 700 to 1,000 bushels per acre. There is thus possible a yield of 4,000 pounds of this very sweet sugar per acre. However, the proposition has not been worked out commercially. The great advantage of this sirup is obvious; by blending it with corn sirup and with maltose sirup their sweetness, and hence their palatability and their value, could be greatly increased. In the manufacture of soft drinks and confections, levulose sirup could replace cane sugar, and thus free great quantities of the latter for use as dry sugar.

### Galactose

Galactose, the third member of the group of simple sugars, is in a way the least important of them, in that it does not occur free in nature to any appreciable extent. The principal point of note about it is that



Maple sirup and honey from the same acre. This is a combination of sweet products that should be found on every farm in the maple regions of the country, and the hives should be found everywhere.



it is a constituent of milk sugar, as will be mentioned below. Since it is not particularly sweet, and since there is no abundant source of it in nature, it will always remain out of consideration as a possible commercial product.

### Sucrose

By far the most important commercially of all the sugars is sucrose. This is our old friend, the ordinary crystallized, or granulated sugar. This product is important to the extent of some eighteen millions of tons annually in the world. In the United States every man, woman and child averages about 90 pounds of this sugar per year, and if we keep candy away from the children some of us get more than this. When, during the war, the 90 pounds was reduced to 24, we thought we were suffering indescribable hardships. Good white sugar, either from cane or beet, is 99.5 per cent sucrose. Leach says of it, "Granulated sugar of commerce is without doubt the purest food product on the market, being generally 99.8 per cent sucrose." Sucrose is also the sugar



A field of Jerusalem artichokes. The tubers of this plant contain a large amount of inulin, a starchlike substance which yields levulose on chemical treatment. The great acre yield of tubers, and the sweetness of levulose sirup, suggest the commercial possibilities of this plant. (From Oregon Agricultural Experimental Station.)



The King of Crops. The starch in the corn grain is hydrolyzed to glucose sirup, giving us our most economical form of sweetness.

in maple products. We are glad to pay three times as much for sucrose from the maple tree because of the delightful impurities the latter provides. Also, the principal sugar in sorghum sirup is sucrose; in fact, at one time the sorghum plant was looked to as one of our most likely sources of granulated sugar. Every fruit and every vegetable, and in fact every plant tissue that has been examined, has been shown to contain sucrose in amounts varying from about 1 per cent in potatoe tubers, and several per cent in leaves and in parsnip and carrot roots, to 5 to 10 per cent in sweet corn, watermelon, pineapples, and apples. In fact, because of its universal occurrence and because of certain other facts, many plant physiologists now believe that sucrose is the first product formed in green leaves by the action of light on carbon dioxide gas and water—the process of photosynthesis. Thus in the economy of both plants and human beings, sucrose is of tremendous importance.

Sucrose readily crystallizes from sirups, as most of us

have seen when sorghum sirup, maple sirup, and home-made cane sugar sirup "sugar out." However, it is very soluble: 1 pound of water will dissolve 2 pounds of sucrose. Sucrose is a rather sweet sugar; it is about four times as sweet as lacrose, much sweeter than maltose and glucose, and is surpassed in sweetness only by fructose. It is no doubt these two properties, its high sweetness and the fact that it can be obtained as a dry sugar by crystallization, that have made sucrose far and away the most important commercial sugar.

Whether from beet or cane, the process of manufacture of granulated sugar is essentially the same. The sweet juice of the sugar cane is compressed by means of powerful rolls on the principle of the clothes wringer. The sugar from the beets is obtained by submerging the thinly sliced beets in warm water, and allowing the sugar to diffuse out. The sugary juice is purified and defecated by means of lime, charcoal, sulfur fumes, and heat, filtered until it is sparkling clear, then concentrated to a semi-sirup and filtered again, then boiled down to a thick sirup in huge vacuum pans. This sirup, under proper treatment, soon throws down a mass of crystals of sucrose. When the crystals have reached the proper "grain," the mass is dumped into a centrifugal. This is a rapidly revolving sieve surrounded by a stationary tub. The crystals are held in the sieve, while the liquid portion flies out through the holes and is caught in the outer tub. The crystals are washed a little, then dried, sacked in 100 pound packages, and the sugar is ready to eat. The



Sugar beets waiting their turn at the factory. We eat the sucrose that is crystallized from the juice; and cows eat the pulp and the molasses and convert them into lactose for our consumption.



liquid portion which did not crystallize is the molasses. Often this will yield a second crop of crystals. The final molasses is then barreled up for the market—cane molasses for human food, beet molasses for stock feed.

Sucrose is one sugar which can readily be a home-made product; not, of course, in the form of white sugar, but as maple products, sorghum sirup, and sugar beet sirup. The making of maple sirup and sugar is a process and an event familiar to everyone in the maple regions of the country. As the maple sirup industry does not lend itself very well to large scale machinery operations, and is hence costly in the labor item, it is on the decline in spite of high prices and good market for the products. When a farmer makes this sucrose product he finds he has one month of disagreeable work every year, but eleven months of keen enjoyment of nature's most delectable of sweets, even honey being hardly more fascinating to the palate than well-made maple sugar or sirup.

Sorghum sirup is another sucrose (or mostly sucrose) product commonly made on the farm. Twenty years ago the small horse-press and "sorghum pan" were very numerous throughout the sorghum-growing regions of the country. But such outfits made the job a messy, laborious, fly-attracting one; and with the advent of cheap and plentiful granulated sugar, the farmers were glad to abandon their outfits and spend their time on more profitable crops. Sorghum sirup manufacture on a large scale, with modern sugar machinery, has been found to be a profitable enterprise, and there are signs of a distinct revival of interest in this sugar product in many sections of the country.

#### Maltose

The word maltose, or malt sugar, suggests malting, and this suggests breweries; and indeed, this sugar can be obtained only by the process of malting grain. Now, maltose is just coming into prominent use, and breweries are just going out of prominent use; and thereby hangs a tale.

It has long been known that when grains, especially barley, are put under germinating conditions—moisture and warmth—they become somewhat sweet. Chemical examination shows that the starch is changed to maltose, and to a lesser extent to glucose. Since yeast demands a sugary, and not a starchy, food medium, grains must be malted before they can be fermented. When the breweries could no longer make liquor, to what possible use could they put their equipment and machinery? A few of them have solved this problem by continuing to malt grain, principally barley and corn, as usual, but instead of fermenting the malt to liquor, they manufacture it into maltose sirup.

Maltose is only a moderately sweet sugar, being somewhat less sweet than glucose and very much less sweet than sucrose. Hence maltose sirup has poor sweetening power. But bakeries are finding many uses for it; confectioners can use a certain amount of it to replace sucrose; and some is used for blending with cane and with maple sirup. It is only a new product, and there has not been time yet to work out its full usefulness in the industries; but it has saved the lives of a few brewery and malting establishments..

Maltose as such does not occur in nature in quantities. Small amounts are often found in leaves and other parts of plants, but no doubt it is here associated with the formation of starch. The starch of grains or of potatoes, then, is the only source of maltose.

#### Lactose

Lactose, our third disaccharide, has the distinction of

being practically the only sugar synthesized by the animal body. It is the sugar found in milk; hence it is the only carbohydrate food used by the young animal until vegetable food can be eaten, or, in the case of our own semi-artificial young, until the fond mother tickles its palate by adding cane sugar to cow's milk, thus creating a "sweet tooth" before ever a point pricks through the gums. Milk sugar is further distinguished by the fact that it is the least sweet of all the common sugars. It is not fermentable by ordinary yeast; hence when the Tartars and Russians want to make their fermented milk beverages, they have to add kephir-grains containing a special species of yeast.

Obviously, sugar of milk will never become an important article of commerce. It lacks sweetness, and it is not available in large quantities and cheaply. A certain amount of it is prepared from the whey of cheese factories and from skim milk, and is used for modifying cow's milk in infant feeding, since many physicians believe it is less subject to bacterial decomposition in the digestive tract. Let it not be thought, however, that lactose isn't important. Milk averages 5 per cent of it; and as there are seven billion gallons of milk produced annually in this country it means that there are three billion pounds of lactose produced.

We have now discussed at some length the group of sugars called the disaccharides, without saying why they are so called or why they are not placed in the group of simple sugars. It is time we did so explain. A disaccharide is a sugar which can be split into two monosaccharides or simple sugars. Every disaccharide can be thus split:

Sucrose plus water equals glucose plus fructose;

Lactose plus water equals glucose plus galactose;

Maltose plus water equals glucose plus glucose.

It is thus seen that the above three sugars are each compounds of two simpler sugars, which arise only when water is chemically added to the mother sugars. It is not sufficient that the sugars be dissolved in water: chemical union must take place, with the formation of the two new sugars.

What brings about the hydrolytic splitting of the disaccharides according to the equation above? There are two great agents for this work: dilute acids, and enzymes. We saw above that starch is converted into maltose and then into glucose by boiling with acid, and this process is of great commercial importance. When grains are malted, and starch is converted into maltose and dextrose, the changes are brought about by the enzymes of the sprouting grain. Enzymes or ferments are bodies of unknown chemical composition which are very powerful in bringing about many kinds of chemical changes. Digestion in the mouth, stomach, and intestines is an enzyme process almost entirely. Thus acid hydrolysis and enzyme hydrolysis are common processes for converting carbohydrates one into another.

When we make taffy, fondant, and certain other kinds of candy, the recipes call for cream of tartar or for vinegar, both of which are acids. During the subsequent boiling, the sucrose is partially hydrolyzed. The two simple sugars that are formed are, as we have seen above, much less given to crystallizing than is cane sugar; therefore the taffy has "pull" and the fondant has "creaminess" without too much "graining." When jelly is made, the acid fruit juice brings about the splitting of more or less of the cane sugar which is added. When cane sugar is manufactured, all acid in the juice must be carefully neutralized to prevent loss of sucrose during the boiling. On the contrary, when making cane sugar sirup, a cer-



tain amount of hydrolysis of sucrose is desirable, in order to prevent the sirup from crystallizing.

This brings us to a wrangle that has existed among chemists for some time concerning the relative sweetness of the various sugars. The mixture of dextrose and levulose, half and half, that results when sucrose is hydrolyzed, is called "invert sugar" because the hydrolytic process is often called "inversion." The question at issue is, is invert sugar more sweet or less sweet than sucrose, weight for weight? The glucose, of course, is far less sweet, but the fructose is a great deal sweeter. What is the sweetness of a fifty-fifty mixture of the two? Do we gain or lose in sweetness when some sucrose is inverted in jelly making and taffy making? Many confectioners and ice cream makers purposely invert their sucrose with tartaric acid, thinking to gain sweetness thereby. Do they, or do they not?

Now this is obviously an important question, and one that doesn't appear very hard of settling. But it isn't settled as yet. We could quote from authorities on both sides. The trouble is in our methods, or lack of them, for measuring or even comparing sweetness. No chemical method can be used; and human tongues, like human eyes and noses and ears, differ widely in their acuteness, and human brains differ widely in their interpretation of sensations. One sugar might easily have a slightly different *kind* of sweetness than another; hence the *quantity* of sweetness could not be compared. The most accurate measurements of the relative sweetness of the various sugars have been made recently in the Home Economics Department of the University of Minnesota. It was found that a gain of 17 per cent in sweetness is obtained by converting sucrose into inverted sugar. We hope that the industrial users of sucrose will be induced to try it more thoroughly, since we would have at hand a method of sugar stretching of tremendous value. Sweetness, more sweetness! We don't care about the calories, but we must have more sweetness!

"Blood sugar" is glucose, so called because it is the sugar found in small amounts in the blood. It was said above that glucose is the only sugar burned by the tissues. The question very naturally arises, then, what becomes of the other kinds of sugars when they are eaten?

Nature has provided a rather roundabout method of handling that problem. In the first place, during the process of digestion, enzymes break down all the complex carbohydrates into simple sugars, that is, all the carbohydrates that are digestible; the rest are thrown out of the body in the feces. Starch becomes glucose, maltose becomes glucose, sucrose becomes glucose and fructose, lactose becomes glucose and galactose. The glucose parts are ready for absorption into the system and for direct use as fuel. The fructose and galactose, however, must be converted into glucose, or they can't be used—and here is where the chemists stop. They know that these two sugars must be used, since the body produces energy in proportion to the amount of them eaten; but they don't know how the transformation takes place. They can't find any enzyme that does it; there is no simple way outside the body by which these sugars change spontaneously into glucose. But change they do, somewhere in the body.

Another of nature's indirect methods of manufacture is the following: The blood contains only glucose; the mammary glands, which obtain their supplies directly from the blood, secrete the lactose in the milk. Evidently

the glands take the glucose, transform half of it into galactose, and then combine the glucose and galactose to make lactose. Thus a cow, or any other female mammal, eating a variety of food materials containing a variety of carbohydrates, changes all of the latter to glucose, then part of it to galactose. Stranger still, if a human mother is involved, she drinks cow's milk with the galactose ready made before it gets to be galactose in her milk. And the suckling infant does a lot of things to it after that.

To summarize: There are six different sugars of common occurrence in the plant and animal world; namely glucose, fructose, galactose, sucrose, maltose and lactose. We desire sugars mainly for their sweetness, since this property makes them useful in improving the palatability of the less tasty foods. To be sure, the sugars are most excellent energy foods; but this is of secondary consideration in most cases. Therefore, one of the great questions before food producers, food manufacturers, and food consumers is, how can we increase our supply of sweetness? In order of sweetness the sugars might be arranged somewhat as follows: fructose, sucrose, glucose, maltose, galactose, and lactose, fructose being the sweetest. Sucrose, or cane sugar is the most important commercial sugar because it can be produced readily from cane and beets, because it crystallizes readily, thus giving us a dry sugar, and because it is very sweet. In taking a survey of the possibilities in the other sugars, we find that fructose looks the most promising, for two reasons. First, it is the sweetest sugar; second, it could be obtained in good acreage yields from the tubers of the Jerusalem artichoke. Two things stand against it at present; it would probably have to be used in the form of a sirup, since it crystallizes with difficulty, and its technology of manufacture has not been worked out.

Of the other sugars, lactose and galactose can be eliminated from consideration, since galactose is found only as a constituent of lactose, and the latter is found only in milk. It has such slight sweetness that there is no occasion for trying to produce it cheaply and abundantly. Glucose is already an important commercial sugar, both in the dry and in the sirup form. It is made from starch, and is a very inexpensive sugar. Its great drawback is its lack of sweetness. The same can be said of maltose. It also is made from starch; but whereas glucose is formed by acid hydrolysis of starch, maltose is formed by enzyme hydrolysis during the sprouting of grains. Glucose is sweeter than maltose but less sweet than sucrose. Therefore, both glucose and maltose sirups are too mild for very extensive usefulness. If fructose were available for mixing with these syrups and enhancing their sweetness, it would be a boon to the commerce in sweet things.

Dr. C. S. Hudson, formerly of the Bureau of Chemistry, in a recent article in which he discusses the American sources of supply of the various sugars, both those that are cheap enough for food purposes and the rare ones that are used for bacteriological work, concludes as follows:

"When one realizes that the best sources of nearly all the sugars are to be found among raw products and plants that occur abundantly in America, most of them being of distinctly American origin, the poet's lines,

My Country 'tis of thee,

Sweet land of liberty,'

seem peculiarly appropriate in a novel sense."

#### SPECIAL ARTICLES TO APPEAR IN JUNE ISSUE

**Food in Its Relation to Health**, by Miss Lulu Graves, Professor of Home Economics, Cornell University.

**What of Our Peanut Oil Industry**, by Herbert S. Bailey, formerly with the U. S. Bureau of Chemistry.

**Pasteurization a Safeguard with Milk from Untested Cattle**, by H. T. Baldwin, Dairy Division, Bureau of Animal Industry.



# FOOD NEWS FROM WASHINGTON



## “Slack-Filled” Container Bill Reported

House Now Has Measure Which is Strongly Opposed by the  
Bottle Manufacturers

Washington Bureau

The American Food Journal

622 Albee Building

**A** FAVORABLE report on the measure to amend the Food and Drug Act of 1906, by prohibiting the use of “slack-filled” packages, has been submitted to the House of Representatives by Congressman Haugen from the Committee on Agriculture, and an effort will be made to have the bill passed without delay.

Two types of packages would be affected by the enactment of the measure, Mr. Haugen pointed out in his report: One, the “slack-filled” package, the other the bottle made of exceptionally thick glass or with inverted bottoms. Samples of the containers which it is proposed to eliminate were obtained by the committee, and showed a great range in the alleged deception practiced. One spaghetti carton labeled and containing seven ounces was but one-third full, and many other cartons used for various commodities were found to be from one-quarter to three-quarters full. It was found on comparison that these cartons were the same size as those used for packing two to three times the same amount of the same commodity. The committee also secured samples of candy boxes with false bottoms, cartons in which the food was wrapped in extra heavy paper to help fill the package, bottles with raised bottoms and others so designed as to appear much larger than they actually are.

“The slack-filled package is frequently used in the marketing of spices, pepper and other condiments, oatmeal, rice, macaroni and like articles,” declared the report. “These packages are partly filled with food, in some instances to but one-third of their true capacity. They are designed to mislead the consumer as to the quantity of food purchased and to exact from him a price based on the apparent rather than the true quantity of the article thus packaged. This type of package not only tends to the deception of the consumer but to promote unfair competition, since that portion of the trade dealing with honestly filled packages of food is detrimentally affected by the competition of the package which is slack filled.

### Says Purchasers Are Deceived

“While it is true that these packages usually are marked in some manner with a statement of the quantity of contents in conformity with the provisions of the net-weight amendment to section eight of the Federal Food and Drugs Act, purchasers are nevertheless deceived because they rely on the appearance and size of the package to indicate the quan-

tity of food contained therein, and where the discrepancy between the size of the package and the amount of food contained therein is so great the marking of the weight is an insufficient means of apprising the purchaser as to the actual amount of food purchased.

“The second type of fraudulent package to be eliminated by this bill is that which is contrived to give the purchaser a false impression as to the quantity, quality, size, kind or origin of the food contained therein. This type may be instanced by the following examples: Bottles with inverted bottoms, designed to falsely indicate a greater quantity of food than is actually present; bottles made of thickened glass for olives, preserved whole cherries, and strawberries, especially designed to magnify the size of the individual olive or fruit and to conceal in the case of olives, the interstices between each, thus giving to the consumer a false indication both as to the quality and the amount of the contents.

“The suggested amendments were based upon information developed by the Department of Agriculture in the course of its administration of the net-weight provisions of the Food and Drugs Act, which shows that certain forms of package food, notably spices, condiments and cereals, are often marketed in containers which are only half filled; that certain canned foods contain an excess of liquid such as water or syrup, and a deficiency of food material. These deceptive packages afford a convenient vehicle for covert increases in the cost of food articles to the consumer.

“While the present provisions of the Food and Drugs Act do not reach this form of deception, the general purpose and structure of this statute is such that with slight amendments its provisions could be readily extended so as to include within the definition of misbranding all forms of deceptive food packages.”

### Bill up in Last Session

Hearings on a similar bill were held by the committee during the Sixty-sixth Congress. The bill was favorably reported to the House, passed by it and reported to the Senate. Hearings were also held during the present session.

The testimony before the committee indicated that the practice of using partially filled containers and containers which appear to hold a greater quantity than they do actually, has increased tremendously in past years, due perhaps largely to the fact that foodstuffs were scarce and rapidly increasing in cost during the war. In many instances manufacturers during the war used the containers they had on hand, only partially filling them, rather than reducing the



size of the package or filling it completely and increasing its price. The testimony further stated that many, due to competition, were unwillingly forced to resort to this practice. The committee held that although to some extent the practice may have been justifiable during the war, it is not considered so now and should be discontinued.

"In view of the fact that one, or a few, can force through competition the use of this deceptive practice, it is believed that legislation such as is proposed in this bill is the only means of protecting the reputable merchant against disreputable practice, the consumer against fraud and deception, and eliminating the practice," said Representative Haugen. "Statements made before the committee would indicate that the majority of purchasers buy the articles referred by the appearance of the package and not by the description or weight of the contents printed thereon; in other words, the average person in making a purchase thinks in quantity rather than weight."

#### Bottle Manufacturers Complain

Bottle manufacturers are complaining to Congress that their side of the question has not been given attention by the committee in considering the bill, and on April 25 a letter was addressed to Representative Haugen by the Glass Container Association inclosing objections to the bill. In response to this Mr. Haugen pointed out that the bill had already been reported to the House, and that the committee had completed its work.

Copies of the correspondence and of the manufacturers'

objections have been sent to other members of the House, in an effort to secure action against the bill when it is brought up on the floor.

It is claimed that the measure would affect every branch of the bottle industry, which is located in 19 States and employs more than 25,000 persons. The proposed law, it is stated, will threaten the industry and its employees with the necessity of closing down; will necessitate the scrapping of hundreds of thousands of dollars' worth of moulds; would require discarding thousands of dollars' worth of shipping boxes, especially designed for the present prevailing types of bottles; would cause a large loss in the stock of cartons, packages and labels; would cause a bill loss in engravers' plates, and would compel the glass manufacturer to consult the Bureau of Chemistry on every new order taken, which departed in the smallest degree from the standard round container.

It is pointed out also that the bill would destroy millions of dollars' worth of good-will for packers and bottlers who have chosen distinctive glass containers for their product. It is declared that in all but a few instances, bottled goods are bought not for quantity but for their various qualities.

A plea for exemption of glass containers is made on the ground that the bill is designed to protect the public from slack-filled packages and that there can be no such thing as a "slack-filled" bottle that would deceive the public; that no matter what the shape or size of the container, a person who has eyes can see whether it is full or not.

## Food Prices Almost at Pre-War Level

### Farm Products Only 25 per Cent Above 1913 and Other Foods

Washington Bureau,  
The American Food Journal,  
622 Albee Building

**S**TUDIES of the cost of living during the war and at present, as compared with pre-war days, now being made by economists in all sections of the country, are developing some very interesting facts. The outstanding feature of such a study, however, is not the great increases in cost which took place, but the fact that the high points were not reached during the war, but after the armistice when, with all energies redirected toward the ordinary activities of life, production should have increased, both in agricultural and manufactured products, to a point where reductions from war prices could be announced.

Another great fact is that, with the exception of clothing, no commodity has decreased so greatly in price as food. Today farm products generally are only 25 per cent dearer than they were in 1913, and food is only 50 per cent higher. As compared with other commodities, farm and food products are ridiculously low. Clothing today is 92 per cent higher; fuel and lighting 107 per cent higher; lumber and building materials 112 per cent higher; chemicals and drugs 71 per cent higher; house furnishing goods 175 per cent higher. The average price for all commodities today is 62 per cent higher than before the war. Food is the cheapest thing we have.

A survey of farm and food prices by years shows that while they started on their upward trend before any other commodities, once the other necessities of life started to climb they soon outstripped food. Further, they climbed higher and, in addition, did not start to come down as early as did food prices, nor have they come down as far.

#### 1913 Figures Taken as "Index"

In 1913, the last full pre-war year, prices were low in practically every line of industry. The 1913 figures are taken as the "index" for all comparisons which have been made, and are known as "100." Thus, 1913 prices in every

commodity are shown as 100, and percentage variations are shown by additions or deductions, as the case may be.

While the average price for food in 1913 was 100, prices in May of that year were five per cent below the average, being shown on the index comparison prepared by the Bureau of Labor Statistics as 95. In September, however, they were five per cent above the year's average, being 105, but both variations were but temporary, since the December index figure was 101. During the year, clothing showed but little variation in price, while fuel and lighting ranged from 98 to 103.

The average food price for 1914 was 103, the monthly index number ranging from 95 to 116, and closing at 105. In clothing and fuel and lighting, the year was one of depression, the average index numbers for those commodities being 98 and 96, respectively.

In 1915 the average farm product number was 105, and for food 104, while clothing had returned to an average of 100, and fuel and lighting had dropped to 93.

#### Tremendous Increases in 1916

In 1916 a tremendous increase in prices took place all along the line. The index number for farm products averaged 122, the monthly index going as high as 146 in November, and closing at 142. The average index for food was 126, the monthly variation ranging from 113 in January to 150 in November, and closing at 145. During the year, however, the prices of clothing outstripped the cost of food, the average index being 128 and the closing month 155. Fuel and lighting went to 119 for the year, but closed at 170, the greatest increase of any of the commodities here under consideration.

Our entry into the war in 1917 is shown by another great jump all along the line. The average for farm products went to 189, running as high as 212 in November and for December being 205. The year's average for food, however, went to only 176, and it is noteworthy that 176 was the year's average for all commodities. The food in-



dex rose continually, though, reaching 190 in May and closing in December at 185. The average for clothing for the year was 181, and for fuel and lighting 175. The greatest increase in any commodity in 1917 was registered by drugs and chemicals, whose average index for the year was 198.

The average index for all commodities in 1918 was 20 points higher than for the preceding year, and for the first time the average index for food was lower. With an average of 196 for all commodities, food stood at 189; farm products were higher, averaging 220, clothing was 239, fuel and lighting had dropped to 163, and the highest of all was again chemicals, at 221. Farm products showed but little increase in the year, going as high as 237 in September but closing in December at 222. Food prices, however, increased fairly steadily from 187 in January to 210 in December.

The index for December, 1918, was the average for the following year, so far as food was concerned, the variation in that commodity ranging from 196 in February to 234 in December. The average for farm products, however, increased to 234 and closed ten points higher, but by this time clothing had far outstripped food, averaging for the year 261 and closing in December at 335. Fuel and lighting averaged 173.

1920 Was the Peak Year

The peak year of 1920 saw big increases in the cost of everything except farm products, the average for which was 218. The highest point ever reached by this group was 246, in January of last year, from which time declines were noted, the December index number being 144.

The average 1920 index number for food was 236. In January it stood at 253, and reached its highest point in May, when 287 was touched. From that time, however, prices descended in big jumps, the December index number being 172.

For last year the average for clothing was 302 and for fuel and lighting, 238, both higher than food or farm products. The average for all commodities, too, was higher, being 243.

All commodities, of course, have made a considerable return toward normal since the high point of 1920 was reached, but today farm products are the lowest priced of any commodity, while food is third lowest, second place being given to metals.

Food and farm products have only a short distance to travel before they are at the 1913 normal, a level to which few have believed we could return. The other commodity groups have still much deflation ahead of them before they reach that point.

The United States Bureau of Labor Statistics has furnished The American Food Journal with the following table, showing the variation of farm products and food from month to month from January, 1913, to March of this year. In order that a comparison may be made of the changes in food prices and those of other commodities, the table also includes cloths and clothing, and fuel and lighting:

Year and month	Farm Products	Food, etc.	Cloths & Clothing	Fuel & Lighting
1913				
Average for year.....	100	100	100	100
January .....	97	99	100	103
February .....	97	98	101	103
March .....	99	97	100	102
April .....	97	96	100	98
May .....	98	95	100	98
June .....	99	99	99	100
July .....	101	102	100	99
August .....	101	104	100	100
September .....	104	105	100	100
October .....	103	102	100	100
November .....	101	105	100	99
December .....	101	101	99	99
1914				
Average for year .....	103	103	98	96
January .....	101	102	98	99

Year and month	Farm Products	Food, etc.	Cloths & Clothing	Fuel & Lighting
February .....	102	100	99	99
March .....	103	97	99	99
April .....	103	95	99	98
May .....	104	96	99	95
June .....	104	100	99	94
July .....	104	104	99	95
August .....	109	112	99	94
September .....	108	116	98	95
October .....	103	107	97	93
November .....	101	106	96	93
December .....	99	105	96	94
1915				
Average for year .....	105	104	100	93
January .....	102	106	96	93
February .....	105	108	97	92
March .....	105	104	97	92
April .....	107	105	99	89
May .....	109	105	99	89
June .....	105	102	99	89
July .....	108	104	99	90
August .....	107	102	99	92
September .....	103	100	100	94
October .....	105	103	103	96
November .....	102	107	105	98
December .....	103	111	107	100
1916				
Average for year .....	122	126	128	119
January .....	108	113	110	105
February .....	109	114	113	106
March .....	111	115	117	108
April .....	114	117	119	108
May .....	116	119	122	107
June .....	116	119	124	108
July .....	118	121	126	108
August .....	126	128	128	110
September .....	131	133	131	115
October .....	136	140	138	133
November .....	146	150	146	155
December .....	142	145	155	170
1917				
Average for year .....	189	176	181	175
January .....	148	150	161	176
February .....	151	159	162	185
March .....	163	160	164	188
April .....	181	182	169	184
May .....	197	190	173	194
June .....	197	187	179	201
July .....	199	181	187	192
August .....	205	180	193	165
September .....	204	178	193	160
October .....	208	183	193	146
November .....	212	184	198	155
December .....	205	185	202	158
1918				
Average for year .....	220	189	239	163
January .....	207	187	211	157
February .....	208	186	216	157
March .....	212	177	223	158
April .....	217	178	232	157
May .....	214	177	237	160
June .....	217	179	245	159
July .....	224	184	249	166
August .....	230	191	252	166
September .....	237	199	255	167
October .....	224	201	257	167
November .....	221	206	256	171
December .....	222	210	250	171
1919				
Average for year .....	234	210	261	173
January .....	222	207	234	170
February .....	218	196	223	169
March .....	228	203	216	168
April .....	235	211	217	167
May .....	240	214	228	167
June .....	231	204	258	170
July .....	246	216	282	171
August .....	243	227	304	175
September .....	226	211	306	181
October .....	230	211	313	181
November .....	240	219	325	179
December .....	244	234	335	181
1920				
Average for year .....	218	236	302	238
January .....	246	253	350	184
February .....	237	244	356	187
March .....	239	246	356	192
April .....	246	270	353	213
May .....	244	287	347	235
June .....	243	279	335	246
July .....	236	268	317	252
August .....	222	235	299	268
September .....	210	223	278	284
October .....	182	204	257	282
November .....	165	195	234	258
December .....	144	172	220	236
1921				
Average for year .....	...	...	...	...
January .....	136	162	208	228
February .....	129	150	198	218
March .....	125	150	192	207

Shippers Interested in Standardizing Containers

To eliminate fraud in the marketing of fruits and vegetables by the substitution of short-measure packages at full-measure prices is one of the principal objects of specialists of the United States Department of Agriculture now

making a study of the hundreds of different types of containers in use. For example, baskets which contain seven-eighths of a bushel are frequently used as bushel baskets.



it being difficult to detect the short measure. In Farmers' Bulletin 1196 from the Bureau of Markets, just published by the department, the specialists discuss the need for standard containers for fruits and vegetables and describe how the public is sometimes defrauded because of the many types and sizes of containers now in use.

Since the passage of the Federal standard barrel law, in 1915, there has been a steady progress in the work of eliminating unnecessary and deceptive sizes from the list of containers used in marketing fruits and vegetables, says the bulletin. The passage of the United States container act, establishing standards for grape baskets, berry boxes, and small till baskets, followed in 1916.

The serious lack of uniformity of containers increases the cost of marketing, say the specialists, because of the greater expense of manufacturing a large number of unnecessary styles and sizes and by breakage in transit, which is sometimes directly attributable to the difficulty of loading odd-sized containers. There are in common use at present about 40 sizes of cabbage crates, 20 styles of celery crates, 30 lettuce crates or boxes, 50 styles and sizes of hampers, 15 styles and sizes of round-stave baskets and marketing baskets varying in size from 1 to 24 quarts, whereas relatively few standard sizes would satisfy all demands of the trade. In many cases the 6-quart market basket, the 14-quart peach basket, the 7-8 bushel bean hamper, and the 5-peck lettuce hamper are confused with peck, half bushel, bushel and 1 1-2 bushel baskets.

The two acts referred to, which establish standard containers, have done away with a large number of unnecessary sizes of barrels, berry boxes and grape baskets, and have awakened a widespread demand for the application of the same principal to other containers, says the bulletin.

### Commission to Investigate Agricultural Situation

The creation of a "joint commission of agricultural inquiry" is provided for in a concurrent resolution introduced in the House on May 4 by Representative Strong of Kansas.

It is provided that the commission, which would consist of five Senators and five Representatives, would investigate and report to Congress, within 90 days following the passage of the resolution, upon the following subjects:

The causes of the present condition of agriculture.

The causes of the difference between the prices of agricultural products paid to the producer and the ultimate cost to the consumer.

The comparative condition of industries other than agriculture.

The relation of prices of commodities other than agricultural products to such products.

The banking and financial resources and credits of the country, especially as affecting agricultural credits.

The marketing and transportation facilities of the country.

Upon the report which would be submitted by the commission as the result of its inquiries, legislation dealing with the agricultural situation would be based.

### Vestal Bill Fixing Standards for Baskets Reintroduced

Congressman Vestal of Indiana has reintroduced his bill "to fix standards for hampers, round stave baskets, and splint baskets for fruits and vegetables." It has been referred to the House Committee on Coinage, Weights and Measures.

The bill provides that the standard hampers for fruits and vegetables shall be the one peck, half bushel, five-eighths bushel, bushel and one and one-half bushel hampers. The standard one-bushel hamper is to contain 2,150.42 cubic inches, and the other hampers are to be in proportion. The quart standard dry measure would have a capacity of 67.2 cubic inches.

Section 2 provides that the standard round stave baskets for fruits and vegetables shall be the one-half bushel, five-eighths bushel, one bushel, one and one-half bushel and two bushel baskets. The one bushel basket is to have

1,075.21 cubic inches of space, the others being in proportion.

The plain splint baskets are to be of four quarts, eight quarts, twelve quarts, sixteen quarts and twenty-four quarts capacity, dry measure.

The Secretary of Agriculture would have authority to prescribe such tolerances as he may find necessary to allow in the capacities and specifications, in order to provide for reasonable variations occurring in the course of manufacture and handling.

Under the terms of the Vestal bill, if passed, it would be unlawful to manufacture for sale or ship in interstate commerce any hampers or baskets not conforming to the provisions referred to, and violations would be subject to fines of not exceeding \$100, imprisonment not exceeding 60 days, or both.

The proposed law would not be applicable to exports, unless contrary to the laws of the country of destination.

### Co-operative Marketing Associations Approved by House Action

Associations of agricultural producers were approved by the House of Representatives on May 4, when the Volstead bill (H. R. 2373) was passed after short debate.

The measure authorizes co-operative associations among farmers for the purpose of marketing their products. There are already a large number of such organizations which, according to Representative Volstead, have constantly been threatened with prosecution, on the ground that they violate the Sherman anti-trust act.

A bill almost identical with the one approved by the House was passed by more than a two-thirds majority last session and went to the Senate, where it was passed with amendments. Inability of the House and Senate to get together on the changes resulted in the bill failing of passage.

The measure provides that persons engaged in the production of agricultural products as farmers, planters, ranchmen, dairymen, nut or fruit growers may act together in associations, corporate or otherwise, with or without capital stock, in collective processing, preparing for market, handling and marketing in interstate and foreign commerce such products of persons so engaged. Such associations may have marketing agencies in common; and the associations and their members may make the necessary contracts and agreements to effect such purposes.

It is provided, however, that such associations must be operated for the mutual benefit of the members and conform to one or both of the following requirements:

That no member of the association is allowed more than one vote because of the amount of stock or membership capital he may own therein, or,

That the association does not pay dividends on stock or membership capital in excess of eight per cent per annum.

Section 2 provides that if the Secretary of Agriculture has reason to believe that any such association monopolizes or restrains trade to such an extent that the price of any agricultural product is unduly enhanced, he may make an investigation and hold hearings and, if it is found that such is the case, he may order its cessation. If the association fails to obey the order the case may be reported to the Attorney General and taken to the courts.

The bill was passed by a vote of 294 to 49, 86 not voting.

### New Bill Provides for Federal Live Stock Commission

A substitute for the Norris bill creating a Federal Live Stock Commission and controlling the production, sale and distribution of live stock and live-stock products has been introduced in the Senate by Senator Sterling of South Dakota.

The Sterling bill is much simpler than that written by Senator Norris, but covers practically the same ground. Instead of a Federal Live Stock Commission, however, control of the industry would be vested in the Federal Trade Commission, which already has power to summon witnesses, conduct hearings and do other things which it was proposed to have the live stock commission do.



# FOOD LEGISLATION

## New York Health Board Conducts "Pure Cream" Campaign

The Department of Health of the City of New York is conducting a campaign against the use of foreign fats in mixture with cream and the sale of such products under trade names. In connection with this campaign the Bureau of Foods and Drugs states:

"In our investigations, the department has found that this product has been sold as, and for, cream. As a result of these investigations, we have instituted possibly 100 prosecutions against dealers who sold cream adulterated with cocoanut oil and these prosecutions have resulted in convictions in practically every instance and the courts have imposed over \$10,000 in fines for these violations. The department has also revoked the permits of certain dealers who sold this product as, and for, cream.

"As a further result of our investigations, the Board of Health has adopted Section 79 of the Sanitary Code, which reads as follows:

**"Section 179. Prohibiting the manufacture, sale and distribution of imitation milk and cream.—**No person shall sell, or exchange, or offer or expose for sale or exchange, any substance in imitation or semblance of milk or cream which is not milk or cream, nor sell, or exchange, or offer to expose for sale or exchange any such substance as and for milk or cream, or sell, or exchange, or offer or expose for sale, or exchange any article of food made from milk or cream, or manufacture from any such milk or cream any article of food.

"Our further work in connection with the use of vegetable oils has been in the prohibition of the use of foreign fat in the manufacture of ice cream. In April of last year the Board of Health adopted its standard for ice cream. After the adoption of this section, certain dealers who manufactured a product from cream and cocoanut oil, objected to this standard and requested that the standard be so modified as to permit the use of foreign fat other than butter fat. After a number of hearings the board finally decided that the standard for ice cream should remain as originally adopted, and we are now making plans to enforce the ice cream standards."

## Advocate Laws for Margarin Makers in Canada

The National Dairy Council of Canada is advocating laws which would provide for a standard color of margarin other than the color of butter, the printing on the container of each package of margarin a statement of the ingredients used and the proportion of each ingredient and that no dairy products could be used in the manufacture of margarin to be sold in Canada.

A resolution was also passed at the annual meeting favoring some equitable arrangements between the United States and Canada for intertrading in dairy products.

## Ferris Food Bill Passed in New York State

As part of Governor Miller's food program for New York, the Ferris bill was recently passed in the State Legislature. It abolishes the Commissioner of Agriculture and Commissioner of Foods and Markets and creates the offices of Commissioner and Deputy Commissioner of Agriculture and Markets. The Council of Farms and Markets has authority to name the new head of the reorganized department at a salary of \$10,000.

## Governor's Veto Kills New Jersey Food Bills

Two bills passed by the New Jersey Legislature at the solicitation of pure food advocates, one of them seeking to increase the nutritious quality of ice cream and the other designed to fix a higher standard for condensed milk, were disapproved by Governor Edwards. Both measures, according to the Governor's opinion, unwarrantably interfered with established business."

## Federal Tax of 2 Cents a Gallon for Beverages Proposed

A Congressional bill, which has been referred to the Committee on Ways and Means, would place a tax of 2 cents per gallon on all non-alcoholic fruit juice beverages.

The bill reads as follows:

"Be it enacted by the Senate and House of Representatives of the United States in Congress assembled, that there shall be levied, collected and paid upon all non-alcoholic fruit-juice beverages, whether carbonated or not, whether consisting of pure fruit juice or of pure fruit juice to which sugar or water or both have been added, when sold by the manufacturer, producer, or importer, in bottles or other closed containers, a tax of 2 cents per gallon, and such beverages shall not be deemed soft drinks. All provisions of any act or acts inconsistent with the provisions of this act, or imposing any other or different tax on the articles taxed herein are hereby repealed."

## Florida Bill Proposes License for Sale of Soft Drinks

A licensing bill of interest to manufacturers of soft drinks will come before the Florida legislature shortly.

Section 4 of this bill reads:

"That for the purpose of this act, it shall be unlawful for any person, firm or corporation to manufacture, import, sell, offer or expose for sale in this State any carbonated or still beverages or syrups, from which carbonated or still beverages may be made, in barrels, bottles, kegs or other containers, without first having obtained a license therefor from the Commissioner of Agriculture. This section shall not apply to retail dealers or those reselling carbonated or still beverages or carbonated water purchased from duly authorized licensed manufacturers, importers or distributors."

In section 4 it is stated that:

"The term 'carbonated or still beverages' as used herein shall include mineral and spring water and beverages commonly known as soft drinks or soda water, carbonated or still, malt and cereal beverages and fruit juices."

The license fee is \$50 per year.

## Canada Makes Changes in Food Acts

Regulations governing the importation, manufacture and sale of oleomargarine in Canada have been amended by the addition of the following clause to section fifteen: "No person shall sell, offer, expose or have in possession for sale in Canada any oleomargarine bearing on the package or container thereof the trademark or the name of the manufacturer in which is included any of the words 'butter,' 'creamery,' 'dairy,' or the name of any breed of cattle."

By an Order in Council, the Governor-General of Canada has deferred until January 1, 1922, the operation of the amendment of the pure food and drugs act, which provides that foods shall be deemed misbranded if, when in package form, sealed by the manufacturer or producer, they do not contain on the outside of the package the name and address of the manufacturer or producer and the correct particulars regarding the contents in terms of weight, measure, or number when the package and contents exceed two ounces.

Under the Heading, "Food News from Washington," on Pages 19, 20, 21, and 22, will be found further news of food legislation.



## Canned and Preserved Fish Industry Gains

### Census Reports for 1919 Show Total Value of Products to Be \$121,694,000

A summary of the results of the 1919 census of manufactures with reference to the canning and preserving of fish and oysters has been issued by the Bureau of the Census, Department of Commerce. The summary includes data for Alaska, as well as for Continental United States, and consists of a detailed statement of the values of canned fish, clams and oysters, and of the quantities and values of preserved fish packed during the year, and was prepared under the direction of Eugene F. Hartley, chief statistician for manufactures.

The figures for 1919 are preliminary and are subject to such change and correction as may become necessary upon further examination of the reports.

#### Establishments Reported and Value of Products

Returns were received from 619 establishments engaged in the industry in 1919, the products of which were valued at \$121,694,000. For 1914 there were reported 538 establishments with products valued at \$55,283,000. From 1914 to 1919 the number of establishments thus increased 81, or 15.1 per cent, while the value of products increased \$66,411,000, or 120.1 per cent.

Of the total number of establishments reported for 1919, 40 were engaged primarily in other industries, but packed fish and oysters to the value of \$2,272,865. For 1919 there were reported 39 similar establishments, with products valued at \$1,923,061.

#### Florida Produces Big Orange Crop

Florida will produce an excess of 1,000,000 more boxes of oranges this year than last, according to estimates just compiled by the Bureau of Crop Estimates, United States Department of Agriculture. During 1919-20, the final reports of transportation companies show that 7,000,000 boxes of oranges were produced in the state. Up to April 1 of this year 7,100,000 boxes had been shipped, and the department statisticians say that this indicates a yield for the 1920-21 season of 8,300,000 boxes.

The grapefruit crop in Florida, however, will not be as large as it was last year, the report shows. During the season of 1919-20, the State produced 5,500,000 boxes of grapefruit as compared with the estimates for this year's crop of 5,000,000 boxes. The total citrus fruit crop of the State, including oranges and grapefruit, was 12,500,000 boxes last year as compared with the estimated production of 13,300,000 boxes this year.

The report shows that up to April 1 of this year only 16 per cent of the grapefruit remained to be shipped, as compared to 30 per cent for the same date last season, and that 14 per cent of the oranges remained to be shipped, as compared to 10 per cent for the same date last year. The total value of the orange and grapefruit crop this year is estimated at \$19,450,000 as compared to \$26,800,000 last year. Though over 1,000,000 boxes more of oranges will be produced this year than last, the total value of the crop is estimated at \$12,450,000 as compared to \$18,550,000 last year. The average price per box is \$1.50 as compared to \$2.65 last year. The value of the grapefruit crop is \$7,000,000 as compared to \$8,250,000 last year, the average price per box being \$1.40; last year it was \$1.50.

#### Milk Marketing Costs Studied

The investigation of milk marketing costs in the city of Columbus, Ohio, which the United States Bureau of Markets has recently completed, shows that the total cost of milk delivered to the consumer's door in that city ranged from 11.3 cents to 15.3 cents per qt. during the first six months of 1920. The costs of one company dealing in "certified" milk are omitted from these figures.

The bureau has for some time been conducting an in-

vestigation of milk marketing costs in various cities. An especially intensive study was made in Columbus and the results tabulated. The milk supply for Columbus comes from over 2,000 producers, located in 15 counties, and is transported from a territory having a radius of about 35 miles. It is considered that conditions in Columbus are fairly representative of many middle western cities.

#### Raw Milk Costs Determined

The results of the investigation further showed that the cost of raw milk delivered at the dairy ranged from 8.7 cents to 10 cents per qt. The total cost of operating the dairy plant, including the pasteurizing and bottling of the milk, ranged from 1 cent to 1.4 cents per quart, and the cost of delivering the milk to the consumer ranged from 1.61 cents to 3.9 cents per quart. "Bottle loss" ranged from one-tenth to two-tenths of a cent per qt.

The retail price of grade A milk during 1920 ranged from 14 cents to 14 1-2 cents per quart, with two small dealers charging 15 cents for milk from tuberculin-tested cows. The wholesale price ranged from 12 cents to 12 1-2 cents. If all the liquid milk products of the dealers whose costs were investigated are combined and an average price computed, it is found that during the first six months of 1920 the average price ranged from 12 cents to 15.3 cents. It is thus apparent that the dealers in question did not make a large margin of profit and that in some instances the costs were even higher than the price paid by the consumer.

From the point of view of both farmer and consumer the important question is: What does it cost to handle milk from the farm to the consumer? The investigation shows that the cost of the raw milk was between 63 per cent and 75 per cent of the total cost to the consumer, thus leaving about one-third to one-fourth of that cost as the margin for handling and profit to the dealer.

#### Southern City Teaches Citizens to Use More Milk

What a city can do toward increasing consumption of milk as a means of improving health is strikingly shown by the results obtained through the milk campaign held recently in Greenville, S. C. This campaign, which was initiated by the State Board of Health of South Carolina, is one of the first ever held in the South. The city council of Greenville, realizing the possibilities for good that such a movement might carry with it, agreed to pay all the expenses of the campaign, while merchants, manufacturers and civic organizations gave the fullest cooperation to the extension forces of Clemson and Winthrop Colleges and to the representative of the Dairy Division of the United States Department of Agriculture, who aided in putting over the campaign.

The campaign was unique in several respects. For one thing, every child in the public schools and in the mill schools was reached directly by speakers, who were furnished largely by the two colleges, and by local nurses. The school work was considered especially important in view of the fact that a survey of 3,114 children in the Greenville schools had shown that 21 per cent of the white children and 14 per cent of the colored children were 10 per cent or more under weight. The average of both was 19.2 per cent.

A dietary survey of the 2,031 white children brought to light the fact that only 44 per cent of them were drinking milk daily, and that only 32 per cent were using as much as a pint daily. Forty-four per cent were drinking tea and coffee daily, and 13 per cent got no milk at all. Among the 1,203 colored children it was found that only 23 per cent were receiving milk daily, and only 11 per cent were getting as much as a pint.

#### "Modern Medicine" Changes Name

Concurrent with the announcement of the change of name of "Modern Medicine," published in Chicago, to "The Nation's Health," comes also the statement of a broader policy to be adopted by that magazine. Industrial health and efficiency will receive increased attention and special emphasis will be placed upon the conditions in industry which make or mar the health of workers.



# Importance of Details in Marketing Food Products

## Thought Should Be Given to Label, Size of Container, Free Sampling and Other Considerations

By WILLIAM CRUGER CUSHMAN

(Second of a Series of Articles on Food Merchandising Campaigns)

ASSUMING that a manufacturer has become convinced that the article he is going to put on the market has intrinsic merit, and the inherent *repeating* quality which is so essential to ultimate success, and that his margin of profit between factory cost and price to consumer is wide enough to provide amply for the necessary percentages that must be allotted all along the line in his campaign of exploitation, there are still many phases to the problem of marketing his product which must be met with judgment and foresight in order to ensure the maximum of advantage and return.

The average consumer is impressionable and is often influenced pro or con by what may seem some trifling feature in the way the product is put out.

Starting with the selection of a trade name, one should be chosen preferably that is short, that will stick in the mind, and withal, that is easy to pronounce. As to the last named requisite, I venture to say that many a sale has been lost on a new article because the consumer has been doubtful as to how to pronounce it, and has feared to "make a break" in asking for it; hence has turned again to the old familiar product. Many specific examples could be given of poor judgment in this direction on the part of manufacturers, but the average consumer can probably call to mind plenty of such from personal experience.

A happy catch-phrase applied to an article is often a gold mine in fostering its sale through felicitous suggestion. Such a phrase is acquired sometimes through a sudden inspiration, or an accidental stumbling upon it, though usually it must be worked out by much earnest thought; but when once acquired, it becomes a great asset to a product.

### Selection of an Attractive Label

The selection of a suitable and attractive label is really an important matter, for when once chosen it should, if possible, be adhered to, as it serves to identify the product in the consumer's mind, and becomes a sort of trademark. Cheapness in this direction is very poor economy. The consumer forms a sub-conscious impression of the quality of the product as foreshadowed by the quality of the label. Thus the highest class lithographic work is none too good. Then, as to context, the virtue of restraint should be exercised. An article may possess many salient points of merit, but it is not wise to crowd them all in on the label. Select one or two of the most outstanding individual advantages to emphasize, and leave something to the imagination. Further details can be embodied in an accompanying leaflet. As well, a certain amount of blank space on a label brings out the context much more forcefully.

Above all, avoid making exaggerated claims as to the great strength or other unusual qualities of your product, for to lend any weight to such claims, your directions

on the label must bear same out. However, if the housewife prepares the product according to directions and gets a weak and sorry mess, the false claims on the label act as a boomerang, and the first purchase becomes the last.

A similar reaction is produced where a manufacturer puts up his goods in an unnecessarily large container for the amount of content. The package makes a brave showing on the grocer's shelf in comparison with other competing products of the same weight, but when the housewife opens that package at home and finds an empty void in the upper part of the package, she feels that the manufacturer has tried to fool her, and thereupon cherishes a certain amount of resentment against both the manufacturer and his product.

### Choosing the Size of Container

An important consideration is in choosing the size of containers in which your product shall be put up. Sizes should be chosen that will ensure same being sold to the consumer at what may be termed standard prices, as for instance, 5 cents, 10 cents, 25 cents, or 50 cents, corresponding to the standard coins in circulation. Other prices are apt to be awkward, harder to popularize, and harder to maintain against price cutting. It is true that during the war, and immediately following, prices became disorganized, and one got accustomed to paying any irregular amount for an article, but we are gradually getting back to "normalcy" with the prospect of returning to the pre-war equilibrium and popular standards of prices.

As to the number of packages that should be packed in a box or case, of course, much depends upon the size of the package and the price of the article, but generally speaking, I would recommend a sufficient quantity to make the amount of the purchase a real consideration to the retailer, for whilst it may be a bit more difficult to secure the initial sale than if the transaction were a trifling one, the effect is to make it a matter of interest to the dealer to turn over his investment quickly and unlock his money, thus insuring at the same time a more energetic pushing of the product by him, and as well, a reduction in the cost of handling on the jobber's part. Actually, there is a better chance of a dealer turning over a \$10 purchase of a new branded specialty within a given time than a \$1 purchase, for in the first instance he is induced to make a serious effort to move the stock, whereas it would be a matter of little moment if only one dollar's worth of goods hung fire on his shelf. It seems to me, therefore, that there is more to be feared in *underloading* a dealer than in *overloading* him.

### Decimal System of Packing

In this connection I would strongly urge the adoption of the decimal system of packing as far as possible, notwithstanding the old established custom to the contrary.



Make the standard unit 10 and multiples of same. This makes it much easier for the dealer to figure the cost of a given sized package, easier for the salesman to make out his order, and easier for the office bookkeeping. There seems, then, to be everything in favor of adopting of the decimal system in boxing and casing, and nothing against it. Why not, then, aim to make it as nearly uniform as possible?

Where the article is packed a given number to a small box, and a number of boxes to a case, it is an advantage to have the smaller container in the form of a display box, which can be opened up and put on the counter. If the box is comparatively small and is attractive, the average dealer will not object to putting the same on display, for this will add to the attractiveness of his counter, and as well, save him a lot of time in bringing that product to the attention of his customers; thus, in a way, the display box on the counter becomes a silent salesman.

#### The Question of Free Sampling

As to getting up samples for free distribution, while theoretically this seems like a quick and effective method of acquainting the housewife with the merits of your product, in actual practice, this is apt to involve either a good deal of lost energy, or a pretty heavy cost for each customer secured. If a certain number of samples are furnished to a jobber with each case of goods ordered, in expectation that they will be sent out pro rata to the retailers, there is apt to be a certain amount of indifference as to the way they are put out and probably an in-

equitable distribution. The jobber is hardly to blame for this, as it means quite a lot of time and trouble to attend properly to same, with no profit in the work. Even when the retailer gets his proper quota of samples, there is still the same difficulty in getting him to give them out equitably. Some clerk may hand out a half dozen samples to some "favorite" of his, and perhaps leave out a number of likely prospects. Thus, the cost of the samples for each customer gained becomes pretty heavy. If the manufacturer adopts the alternative of mailing samples direct to the homes of even a selected list of housekeepers, this means a very heavy initial distributing cost, aside from the actual cost of the samples themselves. Thus, the question of putting out free samples should be well weighed before being undertaken, and if undertaken, a considerable percentage of the marketing outlay should be allotted for this purpose.

Recipe folders or counterslips are surely desirable, and just one good, clean-cut and striking show card is more or less essential. A display outfit for a grocer's window can be of great help to advertise and popularize an article, but if it is undertaken, it should be gotten up on the highest class lines and be a real attraction in the dealer's window. Otherwise it would fail in its appeal, and it were better omitted.

When a manufacturer has satisfactorily worked out his details for preparing his product to be launched on the market, the next and final step is to formulate his exploiting campaign.

#### Use of Milk Increases

Forty-four gallons of milk is used by each person in the United States annually, according to estimates made by the Dairy Division of the United States Department of Agriculture. This estimate refers to whole milk, and does not include that which is consumed in the form of ice cream, cheese and butter. The amount is about twice as much as that used in 1890, when the per capita consumption was approximately 22 gallons. The dairy specialists point out that the increase in the use of milk in the last 30 years is as great as that in the preceding 280 years.

The present-day consumption of milk in the United States, they say, is equal to about one pint per day, or as much as two small glasses. That is not a great amount when it is known that it includes not only the milk that is used for drinking, but also that used in cooking. This is a small amount compared to the per capita consumption in some European countries. In Sweden and Switzerland, for example, nearly 70 gallons are used by each person annually.

In relating the growth of the dairy industry in this country, the department specialists say that in pioneer days each family kept its own cow. The denser the population became the more important it was to have a well regulated and ample commercial supply of milk. Gradually the number of cows increased, and in time a dairy business grew up in various sections. The development of modern methods in the distribution of milk, with economic and sanitary handling, has been closely accompanied by the larger use of this food, they say.

Much of the milk now used in cities comes many miles, and recently improved methods have made it possible to ship it for long distances in refrigerator cars. At the National Dairy Show in Chicago, in 1919, milk shipped from the Pacific Coast took first prize in the market milk competition with the highest score ever given to milk in recent years.

#### Food Retailing System Held to Be Inefficient

The Agriculture Experiment Station at the University of Wisconsin, Madison, cooperating with the Wisconsin division of markets, has issued a bulletin which attempts to assist the retailer in the distribution of food to the public, and also to assist the consumer to obtain fair prices.

One of the conclusions is that the present food retail system is inefficient, because the majority of stores are too small to be efficient either in operation or as competitors of large stores. Under the head of "Inefficiency in Retail System," the bulletin states that "the distribution of Madison's food supply is now accomplished by so many retailers that the average ones do too small a business. Altogether too large a number are inexcusably small. The small retailer cannot buy efficiently. Because more than two-fifths of the food supply of Madison is purchased by exceedingly small concerns, competition is regulated by retailers who are inefficient buyers. The two chief weaknesses of the present retail system are that the costs of operating small stores are greater than those of large stores, and that small size prevents efficient buying.

"A more dependable means of promoting efficiency in all retail stores is to stimulate keener competition among efficient concerns. It may be done in two ways. A number of consumers might be organized into a cooperative society which, because of a steady large volume of business, could employ the highest grade of management. First-rate management could either force all of the small stores out of business or compel them to consolidate in order to survive. Consolidated stores would mean enlarged sales, more efficient buying of supplies, lower operating expenses, and reduced margins."



# EDITORIAL

## Botulism and Spoiled Canned Food

**A**N article in "Public Health Reports" for April 15 says that "It is evidently impossible to accomplish the removal of all spoiled food from the market or to provide against all conditions in which spoiled food may be presented to the housekeeper from time to time. In view of these limitations it is necessary to bring about a general recognition of the dangerous character of food which shows clear physical evidences of spoilage, and to call attention to the stringent necessity of discarding all canned goods deviating from the normal."

This advice is particularly timely because of recent cases of botulism where the investigation showed that the canned food was clearly not fit for human consumption. A recent issue of "The Journal of The American Medical Association" said:

"For some time the food bureau of the Chicago Health Department has been conducting investigations as to the character and quality of canned spinach sold in the local market. During January there were 25 cases of illness with four deaths in Grand Rapids, Mich., supposedly from botulism from this source. It has been discovered that a carload shipment of canned spinach came to this market late in January from the El Monte Canning Company. This carload of spinach was packed in the fall of 1919, arrived in Chicago in February, 1920. It was sold to jobbers throughout the country, who afterward distributed it under their own labels. The Health Department laboratory has examined some of this spinach, and so far has not found bacillus botulinus, but many of the cans were what is known as swells. It is stated also that the canned spinach on hand at the Blodgett Hospital in Grand Rapids, where the cases occurred, was also found to be in this condition."

Warning has been repeatedly given that no canned food or any other kind of food which shows signs of spoilage should be eaten. The Bureau of Chemistry recently investigated a case which occurred in Seattle. The facts were found to be these: The poisoning was due to eating home-canned stringbeans; the method of canning appears to have been an approved one; the servant who opened the can recognized the spoilage, yet the patient ate a sufficient quantity of the spoiled food to cause her death. Here was a case where a little human intelligence would have saved a life.

Despite the fact that canners generally, with rare if any exceptions, are taking every scientific and practical means of preventing spoilage of canned goods, such cases are likely to occur when ordinary care is not exercised in the serving of food. "Public Health Reports" recently contained the following warning: "No food of any description showing even the slightest unnatural color swelling of the container, signs of gas, or any evidence of decomposition whatever, should be used for food purposes. In practically every case of botulism the food was shown to have had an offensive or abnormal odor. While all spoiled food may not contain bacillus botulinus, any spoiled food, even though the spoilage be slight, may contain it, and, in view of the fatal effect of very small amounts of the toxin which this organism generates, the only safe rule is to examine carefully all food products before they are served and to discard those which are even slightly suspicious."

## The Need for Better Business Statistics

**A** PLAN for a broad Governmental statistical service as a regulator of fluctuations in commodity markets was proposed in outline by Secretary of Commerce Hoover at a recent convention at Atlantic City. The conviction on

which his suggestion is based is expressed by him as follows:

"We should have more timely, more regular and more complete information of the current production and consumption and stocks of every great commodity in the United States. I am convinced that we should go even further than this; that we should secure and publish the proportion of the total equipment of more important industries that is in current production, together with the total proportion of labor complement that is in service; and that in a few commodities it may be well to procure and publish the primary prices."

As examples Mr. Hoover cited the coal and rubber industries. As to the former he pointed to the existence of large stocks last fall, unknown to the public, temporarily held up by railroad dislocations. The result was a buying panic and \$15 coal. In rubber a monthly statement of the actual ratio of producing capacity and operation would have saved tremendous losses due to over-accumulation of goods and also would have prevented over-expansion of equipment. Mr. Hoover says further:

"Various industries have tried time and again to secure such data informally, but it is essential to success that it should be collected and presented to the whole commercial community, buyer, seller and banker, by some department of the Government which approaches the problem in a purely objective way, which will hold the individual's return absolutely confidential, and from which the whole public and the industry can enjoy equality of service. Such services are partly conducted in many different bureaus of the Government, but to accomplish their real purpose and greatest value they must be consolidated and conducted more efficiently and from a much broader point of view. I have little doubt that the present expenditures of the Government, if directed by consolidated effort, would cover the entire service necessary."

The present statistical machinery of the Government is not what it should be. Data of value now collected are often too old when issued and in some cases do not enjoy public confidence. Good work has been done by some Government departments on the production of statistics, but these figures tell only half the story. The more difficult task of getting at stocks is yet to be organized.

Secretary Hoover may be over-sanguine as to the extent to which fuller information will prevent business dislocation. Last year the main trouble was that in the minds of many men, no matter what stocks might have been shown to exist, there was entire confidence that "for a year at least" (that was the way it was commonly put) demand would keep up on such a scale as to justify such stocks. But that was a phase of post-bellum malady. It may well be that one of the lessons of the present depression will be the necessity of more careful and consistent study of all of the facts of supply and demand, and that under the leadership of such an organizer as Mr. Hoover industry will come to a new realization of the value of the scientific method.

## Importance of Dehydration

Unquestionably dehydration is growing and will grow enormously in the near future. We have national and world problems of food distribution. We have shameful waste of food products. We have high prices, based often on freight charges. Dehydration is one of the important steps toward a solution.

Much has already been accomplished in this field of food work in the United States, but the surface has only been scratched. It is quite conceivable that within the next decade the dehydration industry will begin to take rank with the canning industry.



## Historical Facts Concerning Bread

**B**READ stands as a definite token or expression of the civilization of a country, says Mrs. Claudia Quigley Murphy, in a history of bread making.

Looking backward many interesting pictures present themselves. White bread or Manchet was the first used in church service and represented "The Body of Christ." Then the clergy allowed some of the unconsecrated church bread to be sold to the nobility; then as wealth developed, the middle classes were able to purchase it. Then later, the baking of white bread was removed from the convents where the nuns baked it, or from the monasteries, where it was sometimes baked by the friars, to the homes of the rich when bake ovens were installed.

Chete bread is constantly referred to in all old books dealing with the foods of the people of the centuries up

to the eighteenth. It was used by the middle classes just as the brown or black bread was used by the peasantry.

In the pages of *Country Contentments* by G. M. (or Gervaise Markham) is found an interesting resume of bread making and barn preparing of that period. This book was published in London in 1623, and is a rare example of early household literature. The housewife of that day was a busy and a most efficient person. She ordered her household constructively and diligently.

Not only did the type of bread used indicate the social standing of the family, but in the homes of the nobility we read that the condition of the bread also had the same bearing, for the royal family had the fresh baked bread—the nobility used it when it was one day old; the gentry when it was two days; the scholars or friars when three

This illustration is taken from the *London and Country Cook, or, "Accomplished Housewife,"* prepared by Charles Carter, "Cook to his Grace the Duke of Argyle," published in London, in 1749, who took the plate from Thomas Dawson's *"Good House Wives Jewell,"* published London, 1610.

The upper left-hand corner shows a woman making butter, with a maid milking a cow at her right.

\* \*

The picture in the upper right-hand corner shows the old process of laundry work.

\* \*

The center picture shows the lady in the kitchen, gathered around her the utensils required. In the background are the hives and the bees making honey; hanging suspended from the ceiling the herbs that have been gathered for flavoring spices.

At the left, the distillatories in which wines and simples were made for family use.

\* \*

The lower left-hand corner shows the kitchen and the preparation of fish. Evidently meat is being cooked in the kettle, suspended above the floor, on the spit at the lower part of the plate is a fowl being roasted, and at the left a maid is preparing fish. Above here are shown plates and below jars, and an amiable cat is walking across the floor, evidently enticed by the odor of the fish.

\* \*

The most important is at the lower right, showing the old bake oven, the fire beneath it, and the dome above it, in which the bread is baked, the shovel at the left, with which the bread is withdrawn. At the right are loaves of bread in various processes of raising.

This picture is one of the very few definite illustrations of the old bake house, to which reference is made in the illustrations in the back part of the Bulletin from *"Markham's Country Housewife."*





days old; and the peasantry the four day old bread. For remember, bread was baked in early days in the ovens of the Manor, the homes of the peasants not including such appliances.

The word Lady means loaf giver—for one of the definite duties of the lady was to distribute the loaves as above described to the classes indicated.

Then followed strict rules and regulations for bread, its production and use. The care in making, the skill in baking—each had its set form of regulation.

Barm was the old name for what we now call yeast. It was kept as wholesome as possible, but was usually over-fermented. There was no understanding of yeast growth, for there was no knowledge of bacteriological conditions. But certain facts insisted upon recognition—so that the unskilled became more proficient through many failures to have sweet nutty bread. Out of this has developed the carefully conducted and skillfully handled yeast industry of today, which replaces the happy-go-lucky, hit or miss methods of yesterday, which give us barm, then slop yeast, then brewers' yeast, followed by home or factory made dry yeast, and now the highly concentrated, most efficient, active compressed yeast of today, rich in vitamins and potential energy.

There was a wide variation of breads, between the highest type and "all-sorts" or similar appellation, known as "black bread." This was made of various kinds of other grain added to wheat, and was consumed by the poorest classes. It was analogous to the present black bread of Europe.

The bakeries were very closely inspected and rigid regulations were enforced. This caused bread making to become a fine art and made standardization possible. Even today the poorest families throughout Europe buy their bread, as they realize that they cannot produce as good a product in their own homes. The little French girl who through shot and shell stayed and baked the village bread, was equally hero and winner of the *croix de guerre* with the soldier who went "over the top" to victory. Without their daily bread the village people would have starved. American soldiers pay high tribute to French village bread.

### Occupational Tax Proposed In Minnesota

A bill declaring various occupations subjects of taxation has been introduced in to the Minnesota Legislature. The bill divides these occupations into various classes, among which are:

Class 8.—Persons engaged in the business of selling merchandise of any kind at retail.

Class 9.—Persons engaged in the business of selling merchandise of any kind of commission agents, packers, brokers, jobbers, or wholesalers.

Class 10.—Persons engaged in the business of manufacturing, assembling, combining, rectifying, or refining any commodity or articles intended for sale or distribution.

Section 3 of the above bill provides, in part, as follows:

"Every person engaged in any of the occupations enumerated in classes eight and nine of occupations shall pay a tax equal to six per cent of the fair annual rental value of the premises used by such person in carrying on the occupation or occupations therein specified.

"Every person engaged in any of the occupations enumerated in class ten of occupations shall pay a tax equal to one per cent of the gross selling value of the commodity or article manufactured, combined, rectified, or refined by such person during the preceding calendar year in carrying on the occupation or occupations therein specified."

The development of bread making illustrates industrial, social and economic progress in a very striking way.

Bread Street in London, where Milton was born, was so named from a market in which bread formerly was sold. In 1302 the bakers of London were forbidden to sell bread elsewhere. The Bakers' Guild of London was established in 1307, denoting that in the fourteenth century in England, bread making was a recognized craft. All through Europe for centuries, the bread supply has been furnished through bakeries. Rich and poor alike buy their bread. Formerly in England, the type of bread eaten denoted the class, as money and estates do today. The bread consumed by those of highest rank and in most affluent circumstances, was the finest and whitest simnel-bread, "machtet" or "pain-demayn," so called from the figure of our Saviour, or the Virgin Mary impressed upon each round flat cake.

We possess less knowledge of the bread of non-warring countries, such as Spain, but this excerpt from a recent letter shows how it is regarded there.

"In Spain a great deal of bread is eaten because it is so good. The Spaniard eats much of it with his meals, and when he comes to the United States and sees the small quantity and thin slices that are served here, it is a great surprise to him. The Spaniard needs much more because it has come to be his preferred form of food."

"In Spain there are many fiestas during the year and families invite each other to meals with great frequency. The care that the receiving family has, is to prepare the table with a large amount of bread, taking care to buy it at the favored bakery. It would be considered very lacking in etiquette to serve bread made at home.

"In the homes of the rich there are always guests and much bread is served with the great variety of other things.

"The bread is so well made that many people prefer it to other food. The working men often breakfast on a large portion of bread.

"In Spain the bakeries are an essential factor of life. It can be said that they are artists in making bread."

### Hotel Managers Test Dehydrated Soup Mixture

Encouraging letters from hotel managers in practically every section of the country are being received by the United States Department of Agriculture as evidence of the success of the department's efforts to popularize the use of dehydrated products. Three thousand quarter-pound packages of commercially dehydrated vegetable soup mixture were sent to as many hotels with a request for a personal test of the product, and a report on its merits.

Replies received thus far show a keen interest in the dehydrated product as a substitute for fresh vegetables. Many of the writers declare it is not only cheaper, but equal to the fresh article in many respects.

One interesting feature is the way in which the chefs of many of the leading hotels fall in line with this departure from the sacred canons of their profession. Some prejudice naturally would be looked for in this quarter; but almost without exception, after suggesting slight changes in the proportion of certain vegetables used in the mixture, they put their approval on the new product.



## Potato Flour, a New American Industry

(Continued from page 13)

part of the potatoes passes through the holes and is discharged, while the rough mass passes on to a third pair of rollers, which are similarly constructed as the second, but provided with three millimetre wide holes. These rollers remove the entire skin from the potatoes.

The mashed potatoes are pressed through two steel rollers rotating against one another and forced through a perforated box located under these rollers. Through the pressure the sticky substance forced through the perforated part of the box discharges itself in the form of short noodles.

These noodles are passed on a conveyor through a drying oven into which a ventilator forces a constant stream of hot air from the bottom up.

The dry potato flakes are then milled, bolted and bagged in the usual manner.

France produces only sufficient potato flour for home consumption and does not figure as an export factor in this commodity.

### Genuine Potato Flour Not a Substitute

Genuine pure potato flour produced as here described is therefore nothing more or less than the whole cooked potato in concentrated form. Its chemical analysis will vary according to the grade and variety of the potatoes, but the average analysis can be given as follows:

Moisture .....	9.82 per cent
Ash (mineral salts).....	4.15 per cent
Protein .....	8.30 per cent
Fibre .....	2.09 per cent
Fat .....	0.49 per cent
Carbohydrates (starch 75.15 and sugar)	

Comparing this with the analysis of the average potato it shows the great elimination of the useless water, the whole potato containing:

Water .....	75-80 per cent
Starch .....	15-18 per cent
Protein .....	2 per cent
Fibre and Mineral salts and ash..	2-3 per cent

A great injustice has been done to genuine potato flour during the war by classing it among the essential substitutes, thereby falsely placing it on par with potato starch, raw potato flour and mixtures of all sorts that have been placed on the market in times of national food conservation, not to improve but to cheapen food materials.

Genuine potato flour carefully made, as herewith described, from whole sound potatoes, in clean mills, is of invaluable aid to the baking industry of the world. In the first place it costs twice as much as wheat flour, which it does not and cannot replace if a high quality baked product is desired. It is usually used in proportion of two per cent with wheat flour and thoroughly blended, proving its worth in many ways to the bakers.

During the process of manufacture the starches in the potato are completely gelatinized, thereby helping yeast growth and assuring better fermentation of the dough.

According to Pasteur, the mineral salts of potato flour are composed mostly of potassium phosphate and calcium phosphate and are the best possible yeast cultures.

Professor Alonzo E. Taylor recommends potatoes for bread production on account of the greater wholesomeness of the loaf, since the potato contains more vitamins and more proteins than any other vegetable.

Another great American food authority who has spent much time experimenting with genuine potato flour in baking, states that pure potato flour adds to the wheat flour many of the valuable food properties which have been taken from it in its modern process of milling.

All baking authorities agree that bread made with at least two per cent potato flour will keep fresh longer, will have a pleasant nut-like taste, gives a crust of better bloom, a crumb of fine texture besides producing better volume. Indeed potatoes in bread have been employed in Central Europe since the middle of the eighteenth century. Irish, Scotch and French bakers, known as experts in their line,

have employed this tuber not only to make yeast ferment but also to improve the quality of their baked foods.

Last but not least, our own mothers and grandmothers made the never-to-be-forgotten "bread that mother baked" with cooked mashed potatoes, which is now replaced by its successor, potato flour.

## Large Food Plants Instal Mathews Gravity Carrier Systems

Several large food manufacturing plants have found gravity carrier systems a practical method of carting packages from one floor to another. One of the largest gravity carrier systems ever manufactured has been installed in the new plant of the American Sugar Refining Company at Baltimore, Md. A similar system in use in the plant of the Joseph Campbell Company, soups and canned beans, Camden, N. J., is shown in the accompanying illustration.

One of the features installed in the Baltimore sugar plant is a spiral system extending from the ninth floor to the ground, with a branch at every floor, to handle bags and cases of sugar. The switch at each floor can be automatically swung by pressing a button at the starting place on the ninth floor.

This conveyor system has been built by the Mathews Gravity Carrier Company, Elwood City, Pa.

Standard gravity carrier systems are built in eight-foot sections, which can be permanently set up in a building or mounted on heavy casters and moved about from place to place. In the ball-bearing system an incline of four per cent, or a half inch to each foot, is sufficient for the packages to keep themselves moving once they are started.

## Sweet Clover Seed in Wheat May Flavor Flour and Bread

Results of an experiment with sweet clover seed in wheat, recently made by the United States Department of Agriculture, show that the three varieties of clover all have the same effect on the milling and baking value and that the aroma when only faintly present in the wheat, is not noticeable in the bread and only slightly so, if it all, in the flour. Bread made from flour containing clover seed gave out a decided aroma in baking and in the samples in which more than 0.5 per cent of the seed had been mixed, a disagreeable taste was noticed.

Sweet clover is frequently found as an impurity in wheat. Commercial firms screen, fan and scour wheat before grinding and though this may and usually does remove the last vestige of the actual sweet clover seed, the aroma sometimes persists. The Bureau of Markets administers the Grain Standards Act and sweet clover or anything else that affects the milling value of wheat is a matter of interest to its representatives. Experiments were made to determine whether the aroma was injurious or merely disagreeable, and what happened when a little of the clover seed was ground with the flour.

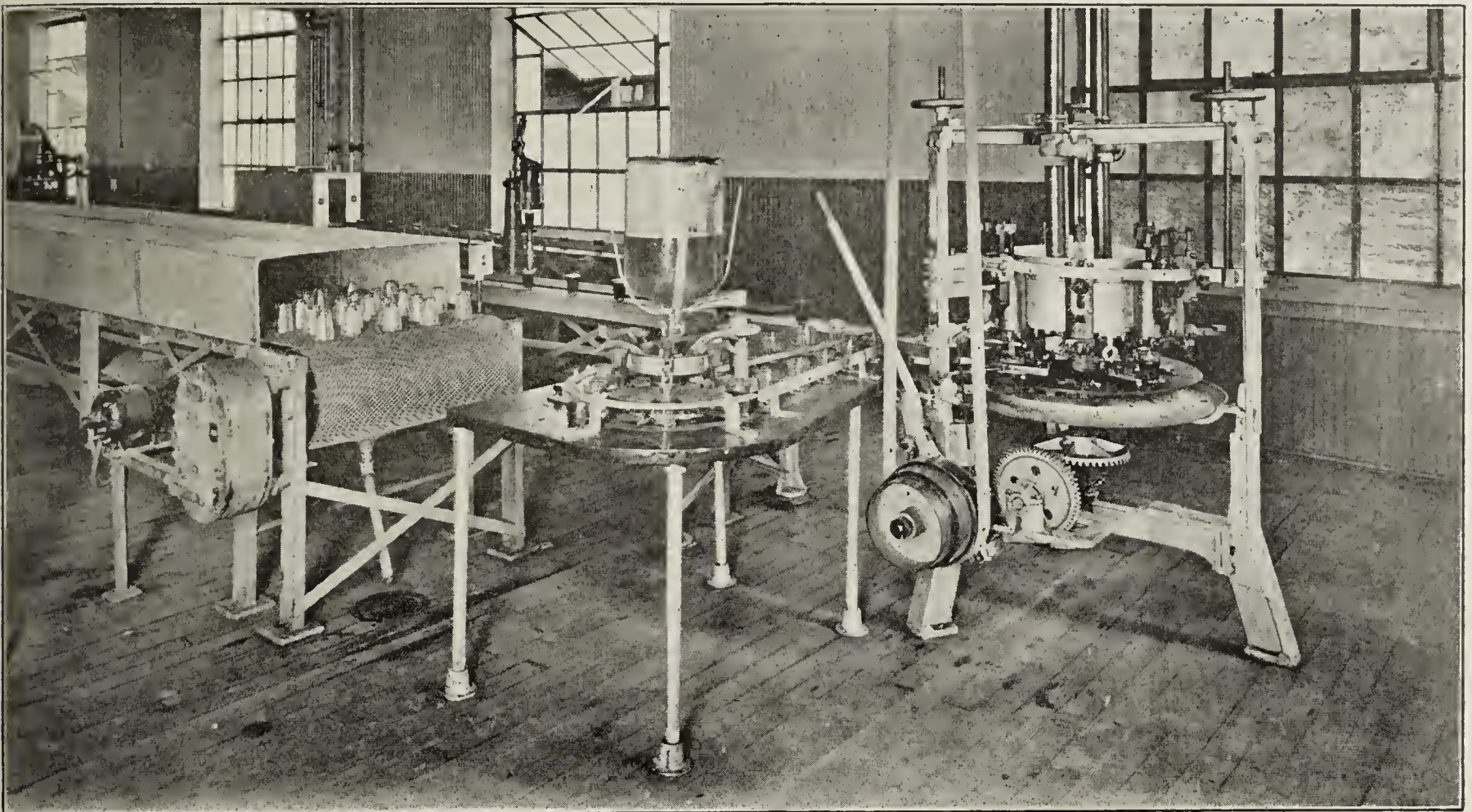
Sweet clover of one species or another occurs in practically every State in the Union. Each of the different species or varieties gives off the same characteristic aroma, namely that of coumarin, a compound which forms the basis of the cheaper so-called "vanilla" extracts.

The three most common varieties of sweet clover were studied in this experiment. Two series of 10 samples each were prepared for each variety and varying amounts of clover seed were mixed with them, beginning with 0.1 per cent and gradually increasing up to 5 per cent. These samples were stored in air-tight cans for two months. The clover seed was then removed from one series and both were milled.

During the milling of the series from which the sweet clover seed was removed before grinding, a faint sweet clover aroma was given out by these samples which had contained less than 0.7 per cent, while those in which greater amounts had been mixed, gave out an unmistakable aroma. In the food and flour resulting a sweet clover aroma was less pronounced and in some cases not perceptible at all. It could not be detected in the cold bread made from the resultant flour.



# MACHINERY AND EQUIPMENT



A pre-heater conveyor consisting of chain belt passing over a battery of steam coils thoroughly dries the containers while they are being carried toward the filling machines.

## Sanitary Bottle Washing and Sterilizing Units

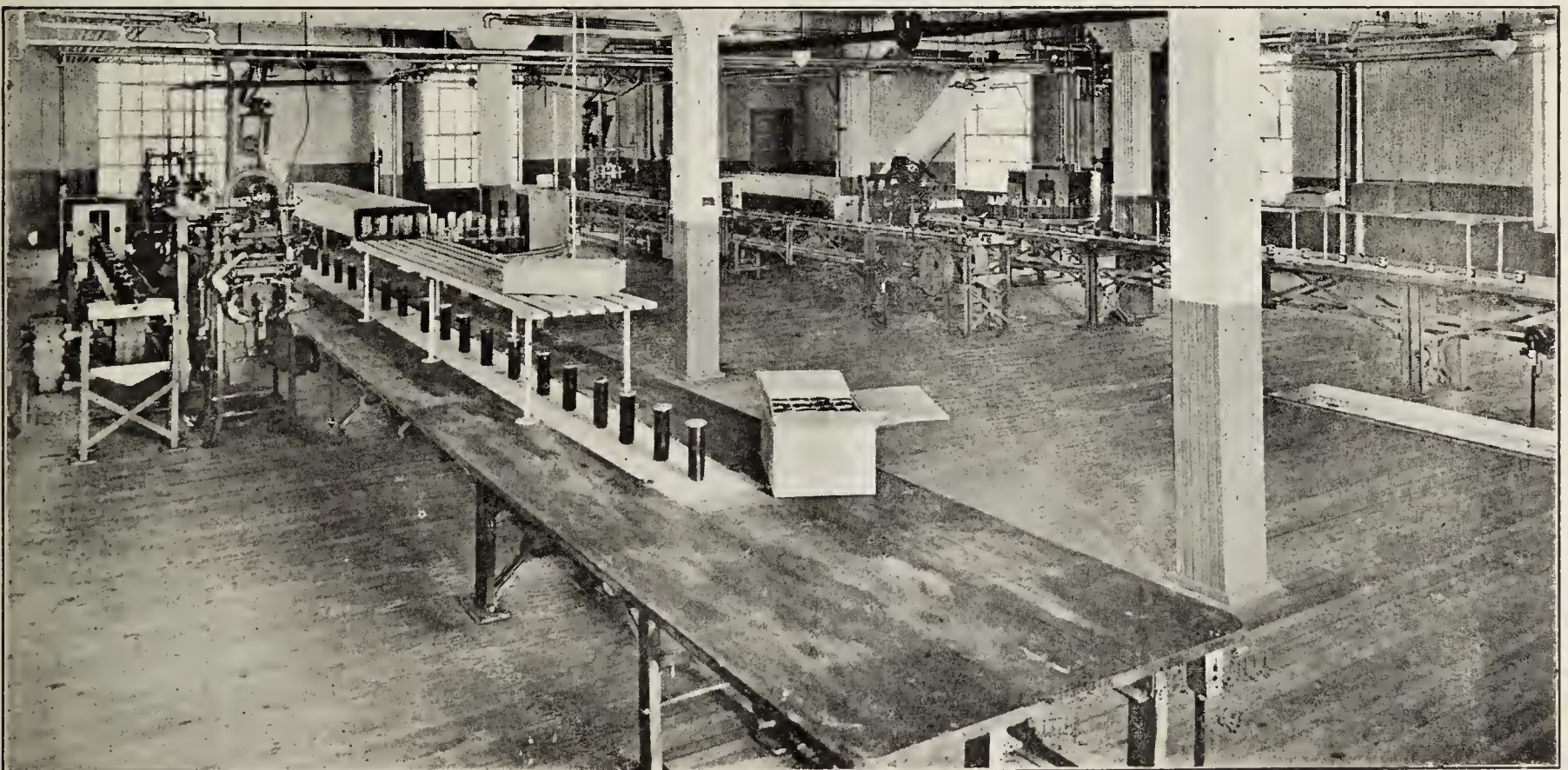
Emphasizing cleanliness in the canning and packing of its goods, the Acme Packing Company, Chicago, recently employed the U. S. Bottlers' Machinery Company, of Chicago, to install mechanical units designed to make cleanliness as automatic as possible.

Quarters have been provided in a roomy, modern, well lighted and well ventilated building, and the two lines of

equipment illustrated, deliver a steady hourly output of 3,000 to 3,600 packages each.

The preparing and mixing apparatus is made of glass enameled inside steel, which is heavy metal with a solid glass coating thoroughly fused into it at a high temperature and with which absolute cleanliness and freedom from any metal contamination is guaranteed.

Any chance for trouble through the accumulation at any point of partially completed packages is avoided by pro-



After the goods are filled and labeled they pass over a belt conveyor to the operators who pack them in corrugated shipping cases.



viding a straight path clear through for each individual container, so that it is washed, sterilized, dried, filled, capped, labeled and packaged in its individual turn and not after being held at certain points for an accumulation of its fellows.

Special washing machines provide two sprays of hot water followed by a finishing spray of live steam, forcibly atomized into each glass or jar. This process delivers an absolutely sterile container, it is claimed.

This is a high speed equipment, delivering up to 60 sterile containers per minute with one operator and 120 with two operators, equally effective on glasses, jars, jugs or bottles of every style or size.

To eliminate the possibility of mould the company has done away with any chance of moisture in its containers through the medium of a special pre-heater conveyor, con-

sisting of a chain belt passing over a battery of steam coils, which maintains a steady, heated temperature that thoroughly dries every container, while at the same time they are being conveyed toward the filling machine, where they are delivered "bone dry" and at the proper temperature for hot filling without breakage.

All washing, sterilizing and pre-heating machines are operated according to the speed of the filling machine so that the proper number of glasses or jars are coming forward as the filling machine disposes of them and this does away with any temporary accumulations of containers in the open, because any unexpected stoppage of the equipment finds the glassware resting inside the enclosed pre-heater, free from all chance of stray dust accumulation.

Prepared products in liquid form are delivered direct from the cooking and mixing tanks on the floor above to the filling machines in proper sanitary piping and are never carried in open vessels across the floor. They flow in correct quantity to match the output in containers and all the process of filling is entirely automatic, including the passage of the containers through and away from the filler, where operators immediately slip the caps or other closures on as rapidly as they come clear of the filling machine.

To provide against spillage, a special outside washer—a literal shower bath of water—sprays over each container directly after it is capped, thus washing away any stray particles which might cling to the glass.

The labeling machines next affix the labels, after which the packaging girls receive them on a belt conveyor, and pack them from a carton rack, which contains the wrapping supplies, into a corrugated fibre shipping box.

#### "Lowerator" for Handling Goods in Factories or Warehouses

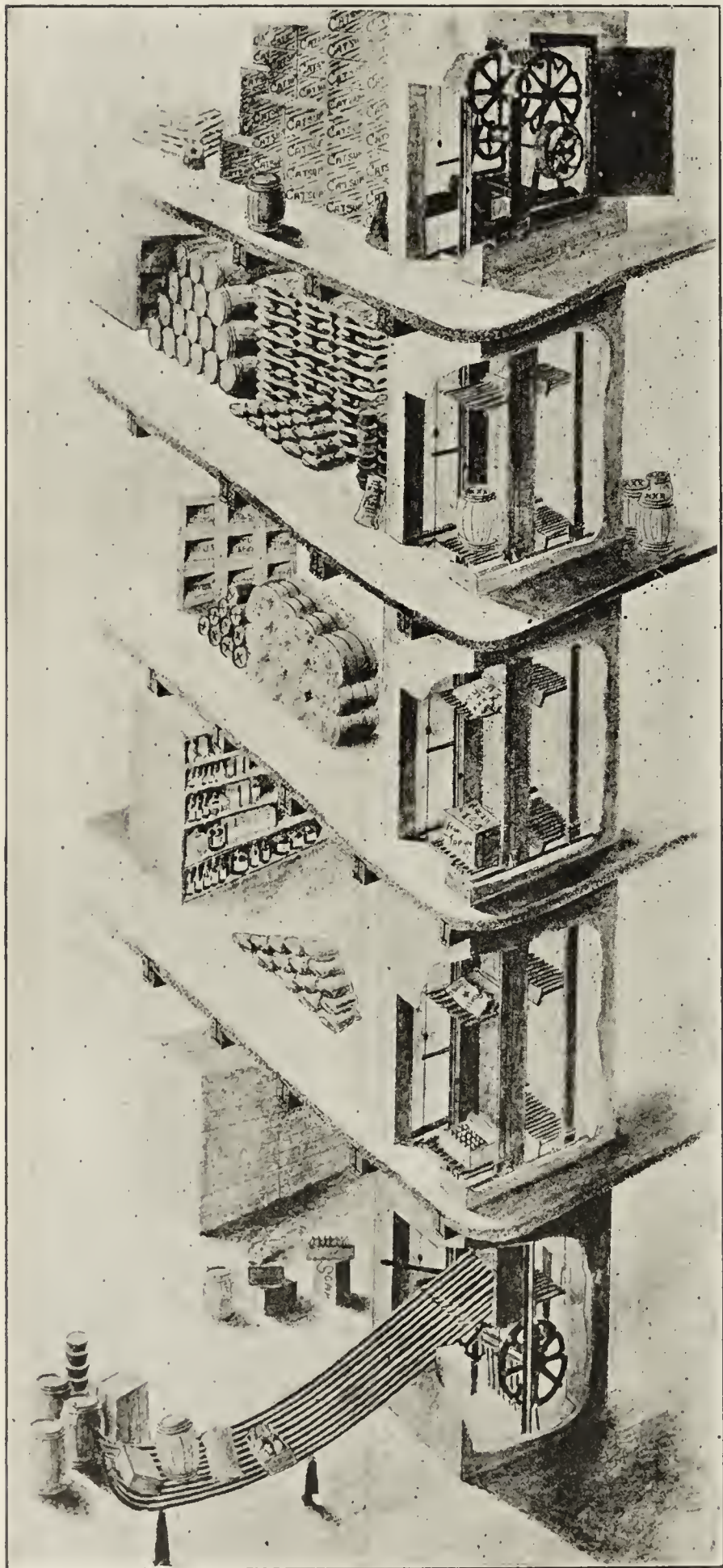
The Lowerator Co., Inc., York and Pearl Streets, Brooklyn, N. Y., has perfected a device for the handling of merchandise in factories and warehouses at a good rate of speed, while doing away entirely with the expense of an operator and with no expense for power. The Lowerator has been installed in a considerable number of food manufacturing plants and wholesale grocery establishments.

The Lowerator works on the principle of an endless chain, the weight of the descending merchandise furnishing the motive power, and the merchandise being unloaded automatically on the ground floor, so that it may be picked up either by hand carts, or conveyed from the Lowerator on moving chains, roller fingers or roller conveyors.

The shaft of the Lowerator is equipped with a number of platforms corresponding to twice the number of floors in the building, with more if desired, so that there will always be two platforms at a floor opening. These platforms are in the form of eight steel fingers ranged parallel so that when the ground floor is reached these fingers pass through the interstices of an inclined grating, if it is heavy merchandise that is to be unloaded, leaving the crate or barrel to slide or roll down into position where it can be called for.

The platforms pass over a set of wheels at the bottom of the shaft, pass up the other side, and over the top of another set, where they again fall into position for loading.

A centrifugal governor keeps the speed constant irrespective of the weight of the packages placed on the platforms, and the fingers will pass through interstices in moving chains, so that packages that must remain upright automatically move away from the Lowerator when the proper floor is reached. A cut-out discharge chute makes possible for the discharge of barrels and boxes at intermediate floors without interfering with the rest of the platforms. A lever conveniently placed throws the chute out of position so that merchandise may be discharged without interference. Slide chutes may be used to convey merchandise a short distance from the Lowerator to roller conveyors.



Cross-section drawing of wholesale grocery warehouse showing operation of the Lowerator



# NEWS OF THE FOOD TRADES

## Distributors Favor Canners' New Plan

### New York Jobbers Endorse National Association's Program

Endorsement of the new plan of membership in the National Canners Association, had been invited to explain the ed by some twenty of the largest firms in New York City engaged in the distribution of canned foods. The occasion of the gathering was a luncheon at the Wool Club.

Frank E. Gorrell, Washington, D. C., secretary of the National Canners' Association, had been invited to explain the new plan and present the subject for general discussion. Following Mr. Gorrell's address, the distributors voluntarily offered to solicit subscriptions for the new movement, and named a committee for this purpose, composed of Sig. W. Seeman, Seeman Bros.; Arthur P. Williams, R. C. Williams & Company; Thomas S. Vallette, Francis H. Leggett & Company; James Reeves, Daniel Reeves Company; and Andrew Davey, Andrew Davey Company, all of New York City.

#### Extensive Research Contemplated

As explained by Mr. Gorrell, the entire work undertaken by the association can be done at a cost of one cent a case, which includes all dues in the National Canners' Association. The main feature of the new plan is the enlargement of the extensive scientific work now being conducted. In order to make the research work of the greatest value to the public as well as to the canning industry, there would be created immediately an organization to co-operate with Boards of Health, giving them the fullest information with reference to canned foods. This organization would also be used for the purpose of getting in touch with various food officials, to give them a better understanding of the canning industry and canning methods.

#### Physicians to be Told of Sanitary Canning Methods

There will be a systematic method of acquainting physicians with the fundamental points of canning and the well recognized sterilization methods in canning use. The medical profession will be constantly advised of the results obtained in research work. Special attention will be given to the correct diagnosis in alleged canned food poisoning cases.

Under the new plan, the National Canners' Association as a whole would confine itself to so-called institutional advertising. That would mean a strong presentation to the public by the association, with regard to the wholesomeness, purity and food value of canned foods, without specifying any particular commodity. On the other hand, it is contemplated that various sections of the industry, such as the corn packers, the fruit people, and others, may undertake the advertising of their own product.

The following concerns were represented at the New York meeting: Koenig & Schuster, F. H. Leggett & Company, Seeman Brothers, Sills Brothers Company, Acker, Merrill and Company, Daniel Reeves Company,

Charles & Company, Progressive Stores, Burton & Davis Company, Hooven Mercantile Company, Kemp Day & Company, H. W. Peabody & Company, Park & Tilford, A. F. Beckmann & Company, Great Atlantic & Pacific Tea Company, Thomas Roulston & Company, Andrew Davey Company, Lewis De Groff, R. C. Williams & Company.

## Decline in March Food Exports

A statement issued by the Department of Commerce shows a marked decrease in the amount of foodstuffs exported this year.

In March, 1921, 1,369,680 barrels of flour valued at \$10,171,513 were exported as against 2,209,202 barrels, worth \$25,066,986, in March, 1920. In 1921, 504,356 pounds were exported in March, with a value of \$94,388, and in the same month last year, 719,958 pounds, worth \$219,207.

A noticeable decrease in the export of fresh beef is indicated by the 6,023,338 pounds which were exported in March, 1920, as against only 508,230 pounds for that month, this year.

There was no marked difference in the amount of pickled beef shipped, but there is a fluctuation in values. The March, 1921, exports being worth \$311,510, and for 1920, \$402,814.

There is an increase in the oleo oil export this year, but the value has decreased. In March, 1921, there were 8,348,238 pounds, valued at \$976,525, exported, and for March, 1920, 6,550,578 pounds, worth \$1,854,295.

Figures for bacon and ham exports are almost half of what they were for March of last year. Lard compounds show an interesting fluctuation. In March of this year, 4,211,317 pounds, of the value of \$467,778, were exported as against only 2,802,922 pounds exported in March, 1920, but the value then was \$729,197.

Figures for condensed milk are: 28,434,355 pounds, valued at \$3,779,650, exported March, 1921, and 50,310,417 pounds, worth \$7,640,606, or almost twice as much for March, 1920.

#### Business Merger in Middle West

The seven plants of the J. T. Polk and Company, with headquarters formerly at Greenwood, Ind., and more recently at Mound City, Ill., have been consolidated with the twelve plants of the Sears & Nichols Canning Co., Chillicothe, Ohio, uniting two of the oldest and largest canning organizations in the country.

With this acquisition the Sears & Nichols Canning Co. will own and operate nineteen plants located in Ohio, Indiana, Illinois, Michigan and Kentucky, with an annual output of some two and a half million cases of vegetables, making this company the largest producer of canned vegetables in the United States. This output will require annually, green produce from 25,000 acres of land, and the finished product will have an annual sales value of from five to six million dollars.

#### South Africa as a Canned Fish Market

A potential market for canned fish in South Africa is indicated in a recent trade journal of London. At the present time salmon and sardines are the only varieties in demand, but it is believed that the sale of canned codfish and haddock might be built up. Previous to the war, sardines put up in cottonseed oil had a rather extensive sale. At that time 6 cents a tin was the prevailing price, but at present the price ranges from 12 to 25 cents.

## Resale Prices Are Upheld by High Court

### Cudahy Packing Company Victor in Final Decision in Frey Complaint

Sales practices of the Cudahy Packing Company in the merchandising of Old Dutch Cleanser complained of by Frey & Son, Inc., who alleged the existence of an unlawful contract, combination or conspiracy between it and various jobbers for the maintenance of resale prices, were found legal under a majority opinion of the United States Supreme Court, handed down by Justice McReynolds. The decision was in line with a previous finding of the Court in the case of Colgate & Company.

Frey & Son instituted an action in the United States District Court for Maryland to recover threefold damages and the case was submitted to a jury. Judgment for \$2,139 was entered, but the decision was reversed by the Circuit Court of Appeals and the latter was upheld by the Supreme Court. The court below concluded, "There was no formal written or oral agreement with jobbers for the maintenance of prices."

Justices Pitney, Day and Clarke dissented, pointing out that while the defendant denied it was a party to any such combination, contract, or conspiracy to fix and maintain prices, it insisted "it had merely notified the jobbing trade what prices it thought were the lowest at which jobbers would resell its product at sufficient return to make it worth their while to push the sale of such product."

The plaintiff admitted that with reference to most of the jobbers at least, there was no written and signed agreement on the subject, and none couched in any formal or express terms, but stated that the Cudahy Company from time to time had issued circulars urging the importance of maintaining "uniform and fair jobbing and retail prices and trading provisions" and stating that "any sales by jobbers at special prices would demoralize prices and disturb the entire business in these products," and that "uniformity and equality as to terms, delivery and price is essential. It is therefore required of our distributing agents that they fully co-operate with us in this direction, as per terms, conditions and prices laid down in our published general sales list."

It was on the basis of this and the notice stamped on bills to wholesalers that quotations should not be lower than named in the sales list, that the trial judge based his charge to the jury.

The court's decision which will prevail held that the recited facts, standing alone, did not suffice to establish an agreement or combination forbidden by the Sherman Act, and decided the case in favor of the Cudahy Packing Company.

#### Alabama Wholesale Grocers' Association Organized

As the result of a meeting of a score or more of wholesale grocers from Alabama and the lower part of Georgia, the Alabama Wholesale Grocers' Association was organized. W. F. Black of Troy was elected president; W. McCormick, of Eufaula, first vice-president; S. F. Earle, of Birmingham, second vice-president, and R. F. Whitcomb, of Florala, secretary and treasurer.



## Wholesalers Condemn "Drop Shipments"

### Southern Association Adopts Resolution at Cincinnati Convention

The Southern Wholesale Grocers' Association held its annual convention at Cincinnati on May 10, 11 and 12. One of the important actions taken had to do with the matter of "drop shipments." A resolution was adopted condemning them as "uneconomical and unwise."

In his opening address to the convention President McLaurin said "the South stood for two principles, the first of which was that the consumer had a right to expect and should demand that food be distributed from the primary markets to them at the lowest cost, quality considered, and that if the jobber could not qualify he had no right to existence. The second principle," he said, "was the economic system of distribution from manufacturer in a perfectly straight line through wholesaler and thence to retailer to the consumer."

#### Gain in Membership

The report of Secretary E. L. Adams showed a gain in membership for the year. Last year the total membership was represented as being 1,924, while during the year there were added 268 new members, with losses of 132 due to resignation or otherwise, which leaves a net gain of 132 and a total this year of 2,065. As Secretary Adams stated in his report, the organization has shown a steady progress since 1916, since which year there has been a growth in membership.

The question of consolidation with the National Wholesale Grocers' Association came up in the report of the executive committee, Chairman T. H. Scovill saying that after a conference with a committee from the National at Milwaukee last year this was deemed inadvisable because it had been decided more good came to the Southern through the fact that it operated with its president as the chief executive officer, rather than through the system employed by the National.

#### The Resolutions

Drop shipments no longer will be countenanced by the Southern association, as a result of a resolution adopted at the closing session.

"Drop shipments are uneconomical and unwise," so stated the resolution which was read by Wiley Blair, Dallas, Texas, chairman of the resolutions committee, "and the practice of making such shipments should be abandoned and it is hoped that manufacturers will carefully consider this question to the end that the most economical and just method of distribution be adopted."

Immediately after the reading of the resolution a discussion was started from the floor which ended by the president, J. H. McLaurin, asking for an aye and nay vote, which sounded so equally divided that a counted vote was decided upon. The result showed 82 in favor of the adoption of the resolution and 41 to the contrary.

Another resolution which was received enthusiastically recorded the association as believing that the merchandise broker is a necessary link in the economical distribution of the nation's food.

Summaries of other resolutions which were adopted, are as follows:

"Any quantity rates are unjust and unreasonable and whatever commodities move in carloads that a carload rating less than the present, any quantity rates and less than the carload ratings be established and this association intervene in the pending case of the Merchants' Exchange, of St. Louis to that end.

"Members of this association do hereby approve and indorse the legislation presented by Congressman W. Turner Logan to provide a penalty for failure of common carriers to adjust and pay within a specified period claims for freight overcharged or for loss or damage to property while in possession of a common carrier."

"That Section 20, Paragraph 11, of the Interstate Commerce Act should be amended by providing that any common carrier, a party to a through rate or a through bill of lading, shall be liable to the lawful holder of the bill of lading for any loss, damage or injury caused by it or by any of the carriers parties hereto."

"Manufacturers who sell their goods at delivered prices are hereby requested to prepay transportation charges. In the opinion of this association, manufacturers should not attempt to evade the responsibility for prepaying transportation charges by quoting their products f. o. b. shipping point less freight."

"Commends work of the contract committee under the chairmanship of E. A. Humphrey, Clinton, Okla., in devising and distributing the 'Golden Rule' contract. This is a fair and just contract. We hereby indorse the principles laid down in it and express the belief that they should be applied in the purchase and sale for future delivery of all food commodities."

#### Want Mileage Books

"Heartily indorse and commend the purpose of bills presented in Congress to authorize and direct the Interstate Commerce Commission to have common carriers issue mileage books for 1,000 miles at substantial reductions under the regular passenger fares."

"We do hereby request our Congressmen and Senators to favor the enactment of legislation at this session of Congress to prohibit common carriers from increasing interstate rates, fares and charges without the permission of the Interstate Commerce Commission."

"Condemns the practice on the part of any manufacturer offering any special compensation to the salesmen of wholesale grocers, the purpose of which is to secure preferred attention to their products."

"It is the sense of this body that no wholesale grocer is justified in attempting to demand cash discounts unless remittances are made within the discount period."

"It is the wish and desire of this body that sugar refiners and the various dealers in commodities which are usually handled in sacks or bags should adopt the use of cotton bags, thereby furnishing an increased market for one of the principal products of the country."

"In our opinion manufacturers are under the same obligation to liquidate any indebtedness they may be under to wholesale grocers by sending a check for such indebtedness as is the wholesale grocer to remit in negotiable funds for his obligations to the manufacturer."

"Free deals are wrong as a business practice and uneconomical. This association hereby expresses itself as opposed thereto, and it is hoped that manufacturers will consider the question to the end that economical and just merchandising be adopted."

Officers who were elected are as follows: President, J. H. McLaurin, Jacksonville, Fla.; first vice president, E. W. Hoffman, Milwaukee, Wis.; second vice president, W. D. Cleveland, Jr., Houston, Texas; third vice president, Alger Fowler, Seattle, Wash.; fourth vice president, Guy V. Lewis, Cincinnati, O.; fifth vice president, J. C. Felsenthal, Memphis, Tenn.; sixth vice president, Thomas B. Holmes, Goldsboro, N. C.; treasurer, John D. Baker, Jacksonville, Fla.

It was decided to continue the present salary of the president, which amounts to \$25,000 a year.

## Sweet Chocolate Is Food, Not Candy, Says Court

Sweet chocolate is a distinct food product and the Government cannot sweep it within the scope of the word "candy," Federal Judge James M. Morton, Jr., at Boston, ruled recently. He directed a jury to find Walter M. Baker & Company, plaintiffs, in a suit to recover \$60,000 in manufacturers' excise taxes paid during six months of 1919.

Similar suits by other chocolate makers, counsel for whom prosecuted the Baker case, will be filed for recovery of millions in excise taxes paid on their product, it was said.

### Ohio Wholesale Grocers Meet and Elect Officers

Reports at the annual convention of the Ohio Wholesale Grocers' Association, revealed that while the volume of business done by the wholesale grocers is falling off, the resultant losses are being decreased through intensive reduction of overhead expenses.

R. E. Hills, Delaware, was re-elected president of the association for the eighth consecutive year. J. W. Van Meter, of the Samuel Stevens Company, Columbus, was re-elected vice president, and Miss Florence Hall, Columbus, was re-elected secretary, and was also given the office of treasurer which was formerly held by George H. Cless, of the firm of Ulrick & Cless, Columbus. The new executive committee for the association is composed of W. M. Briggs, Portsmouth; W. S. Meredith, Springfield, and J. W. Van Meter, Columbus.

### Samuel H. Small Elected President Postum Cereal Company

At a recent meeting of the Postum Cereal Company, Samuel H. Small, who has long been general sales manager of the company and one of the best known factors in the food trade was elected president of the corporation in place of Carroll L. Post, who was made chairman of the board, a new position; Arthur R. Williams, the company's counsel, was made first vice president; H. C. Hawk, second vice president, and E. F. Hutton, third vice president. C. M. Chester remains as treasurer. The company's main executive offices will be located in New York City at 366 Madison avenue, but the operation of the company will remain as at present in Battle Creek.

### Box Makers Elect Officers

The National Paper Box Manufacturers' Association, at its annual convention in New York, May 11 and 12, elected the following officers: President, Charles M. Coom; vice president, H. O. Alderman; treasurer, A. W. Hutton, and secretary, W. W. Baird. The following directors were chosen: Western District, A. G. Burry; Central Division, E. W. Gilbert; New England Division, E. C. Wentworth; Eastern Division, Walter E. Trumm, and Southern Division, F. W. Kaufman.

### Higgins and James Combine

William A. Higgins & Company, of 371 Washington Street, New York, and Ernest J. James, of 105 Hudson Street, New York, have combined forces in a new company, to be known as Higgins & James Company, Inc. Offices and warehouses are to be located at 371 Washington Street, and 386-388 Greenwich Street, New York. The new company, effective June 1, will continue as importers and wholesale dealers in dried fruits, nuts, etc.

Louis C. Owens has resigned his position as vice president of Austin, Nichols & Company. Mr. Owens has been in charge of the operations end of the Brooklyn plant, having been with the organization since 1896.



## Canning Situation Serious, Says H. P. Strasbaugh

### Outlook Anything But Promising for This Year's Pack, According to President of National Cannery

The present canning situation was outlined by Harry P. Strasbaugh, of Aberdeen, Md., president of the National Cannery Association, in an address made before the Tri-State Wholesale Grocers' Association, held in Atlantic City.

"This is a time that action is imperative," said Mr. Strasbaugh. "Has the grocer or canner reckoned without his host? The trade papers and other sources advise that the grocer is going to continue to buy spot canned foods in less than carload lots and that the wholesale grocer does not intend to buy futures in 1921. If such reports are true and such a position is going to be maintained, I want to assure you that before another twelve months, the pendulum will swing in the opposite direction, equally as far as it swung on the below cost basis.

"Most canners have always been under-capitalized. Those canners who were comfortably capitalized a year or two ago have experienced 1920, and in many cases their capital is greatly impaired. The large percentage of canners have always depended upon future sales which enabled them to finance their business and make arrangements and contracts for their raw stock requirements. In previous years the middle of April indicated a considerable quantity of futures sold and practically every canner with all arrangements made for the coming canning season.

"The pendulum has already swung in the reverse direction in this regard. The middle of April, 1921, found as few canners prepared for the canning season as were not prepared other seasons at this same date, and those unprepared for the packing season without any arrangements made or intent to undertake the season's work, are quite as numerous this season as were the number of prepared canners in previous seasons at this same time.

"The grower grows the crop; the canner preserves it for future use; the grocer is the distributor, and with the absence of demand from the grocer, it is quite natural that the canner is not making his arrangements as usual. This leads us to the question, what is the relationship of the grocer and the canner? A prominent grocer, an ex-president of the National Wholesale Grocers' Association, within the last six months, told the Western Cannery Association in Chicago that the wholesale grocer was the canners' ally; that the wholesale grocer wanted to co-operate with the canner, that he looked upon the canner as the producer and believed that the wholesale grocer was the distributor. We were told in that address that the canner could depend upon the wholesale grocer for co-operation.

#### Canner Needs Co-operation

"The canner fully appreciates that the wholesale grocer has had some experiences in 1920 which will not soon be forgotten. The canner well knows the conditions which brought about this situation and also the disastrous results. This is why the canner has been willing to make concessions in the selling price of his 1920 product, not only at cost, but in many cases 30 and 40 per cent. below cost in order that his little spoke in the wheels of commerce might continue at least alive and active rather than inactive and unproductive. Canners have even offered 1921 packing at cost and below any possible conservatively figured cost, just to keep the ma-

chinery going. It is for the wholesale grocer, the canners' ally, to say just how much co-operation has been given to the canner in return for his sacrifices.

"Deflation was the accepted remedy by those in command. Canners' products were deflated and whether willingly or unwillingly, the canner drank deeply from the cup of deflation. Time alone will decide whether the distributor has shared with the canner and to what extent in this contest of deflation, and many of you are better able to say today than the speaker to what extent losses have been taken by the distributors when compared with the losses of the producer.

"It is for you to say whether it is the exception or the rule at the present time to meet quotations based on replacement values or whether the majority of quotations are above or below replacement values. For the last several years the canner of quality brands, found a better demand for fancy and extra standard grades than for standards. The canner who packed the better grades in 1920 has been confronted with the reverse situation. Price alone seems to be the chief consideration. If the canner desires to exchange his holdings for dollars, the price offered or indicated seems to almost invariably be based upon the offering price of some standard or off standard lot, and the canner who believes in quality, who spends more money to pack quality, is confronted with the suggestion that no matter how much more quality may cost, no matter how much more effort may be given towards packing quality, it is 'love's labor lost.'

"If the grocer and the canner, known as allies, are going to co-operate with each other, it is essential that the grocer should know just how such business practices appear to the man on the other side of the fence. Sometimes it is well for people to look through the fence, in between the palings, that is, if they are looking with constructive and not destructive eyes, and when the canner is in a position that he is about to enter a new canning season or at least decide whether he will or will not be looking through the fence, we can see how uncomfortable he may appear when he receives the message as indicated in two quotations in a trade paper within the last few days in response to his effort to dispose of a part of his coming pack: 'Sufficient unto the day is the evil thereof,' and 'Let the future take care of itself.' This prominent trade paper editor said that the latter was the slogan of the canned foods distributor and the former quotation, his motto. This article further stated, 'The buying is for immediate consumptive requirements and warehouses are no longer chiefly utilized to carry a surplus for subsequent distribution.'

#### Suggests Solution for "Returned Goods Evil"

In a letter to the National Wholesale Grocers' Association, E. F. Brewster, president of Brewster & Gordon Company, Rochester, N. Y., suggests a method of minimizing the amount of returned goods, heavy increases of which have caused considerable dissatisfaction in wholesale grocery trade circles.

"The 'return goods evil' has been one of the hardest problems we have had

to contend with," writes Mr. Brewster. "About six months ago a steady increase in the amount of goods returned was noticed, and we decided that some radical measure must be taken to effect a reduction.

"After going into the proposition carefully we decided that we would not accept returned goods from any customer until his request to make the return was fully explained and approved in the office.

"We then devised a slip which we had made up in pad form and furnished to our salesmen. At the same time we instructed our truck drivers that they were not to pick up any returns whatever unless they had one of these slips signed by the house and approved by the department buyer."

The form used by Brewster, Gordon & Co., called for a full explanation by the retailer as to the reason for making the return, as well as the purchase date and other information.

"This receipt signed by us," Mr. Brewster's letter continues, "is authority for our driver to accept goods for return. Under no other circumstances is he allowed to bring back goods.

"When a customer has goods to be returned, the salesman enters on this slip his name and address, the date when the goods were purchased, the reason for the return, whether the order was a specialty or placed in the regular way, and then the articles to be returned.

"The slip is sent into the house by the salesman, and the reason for making the return checked up in the office. If the reason is a just one, the slip is signed by the department buyer and sent down to the truck making the next trip to this particular customer's store and the goods are picked up.

"If we find that the return of the goods is not justified, the slip is sent back to the customer with a courteous letter explaining just why we cannot accept the return."

#### U. S. Food Products Show Profits of \$1,758,373

The annual report of the United States Food Products Company for 1920 shows the following results: Net income from all sources, \$2,898,279; less interest paid and accrued, \$689,906; depreciation on plant and equipment for the year, \$450,000; net profit carried to balance sheet, \$1,758,373.

President George Q. Palmer in his report to stockholders says in part:

"This corporation, like many other manufacturing and commercial companies, suffered considerably from the depression in business during the fall of 1920. Owing to this the market values of our inventories at December 31 depreciated in value over \$1,500,000. These inventories are now carried at cost or market, whichever is the lower.

"Since the beginning of the current year the company has been making steady progress both in the reorganization of its departments and in preparing for the enlarged demands for its products, and in two of its principal branches, the alcohol and yeast departments, has already shown signs of marked improvement. We entertain prospects for better business in our molasses, syrup, honey, vinegar, preserved fruit and cattle feed departments. The organization of the various branches has been centralized in New York by the installation of a general controller, a general sales department and a general purchasing department head. All the tank cars of the various companies and subsidiaries have now been transferred to one tank car line, and the numerous ships of the company have been put under one corporation and control. Economies have been effected by these changes."



# More Substitutes for Lard Than Butt

## Vegetable Oils Principal Ingredients of Most Substitutes—Large Increase in Production of Nut Margarin.

Vegetable oils are used more in the United States to replace lard than to replace butter, according to data collected by the U. S. Bureau of Markets. The best estimates available indicate that lard substitutes manufactured in the United States during 1920 were about 34 per cent. of the total lard and lard substitute production, while margarins were about 20 per cent. of the total butter and butter substitute production.

It is a difficult matter to determine the total production of lard and butter in the United States because much is produced and consumed on the farm, and therefore is not recorded. Careful estimates, however, based upon census surveys and reports of governmental inspection agencies indicate that the total lard production during 1920 was 1,936,000,000 lbs. For the same year the production of butter is estimated at 1,400,000,000 lbs., of which 800,000,000 lbs. were factory butter and 600,000,000 lbs. farm butter.

### Margarin Production Determined

The production of margarin can be accurately determined because the tax imposed on the production affords a means of recording the output. The term margarin is used to include animal margarins, nut margarins, and combined oleomargarins. The total production for 1920 was 370,700,000 lbs., of which 191,000,000 lbs. were made exclusively from vegetable oils. It is necessary, however, to estimate the production of lard substitutes during 1920. The records of the U. S. Food Administration show that the average production from 1914 to 1918 was about 1,100,000,000 lbs. It is estimated that in 1920 about 80 per cent. of the output of crude cottonseed oil in the United States went into the manufacture of these products. If this is correct, the production of lard substitutes from cottonseed oil would amount to 913,000,000 lbs. A refining loss of about 7 per cent. must be subtracted, but since the finished product contains an average of about 7 per cent. of animal fats, 913,000,000 lbs. seems to be a reasonable figure. As peanut, soy bean, palm and palm kernel oils are also used by this industry it is believed that 1,000,000,000 lbs. is a very conservative estimate of the production of lard substitutes.

Tables 1 and 2 give the best available figures on production of lard and lard substitutes and butter and butter substitutes.

In 1909 the Bureau of the Census reported factory production of butter as 627,145,865 lbs. and farm production as 994,650,000 lbs. Since that time, however, farm production has decreased. The decrease has been gradual and due largely to the introduction of the cream separator and the growth of local creameries. The farm production in 1920 is estimated at 600,000,000 lbs. On this basis the relation of margarin production to butter production is about 25 per cent. and to the total butter and butter substitute production, 20 per cent.

An important factor to be considered is the relative amount of vegetable oil contained in the substitutes. In the case of lard substitute this averages about 93 per cent., though the percentage varies and some lard substitutes are made entirely from vegetable oils. In margarins the percentage varies from 0 to 100 per cent. Strictly oleomargarins contain much beef fat while the true nut margarins are made exclusively from vegetable oils. The large increase in margarin production has been in the nut

margarins as will be seen from Table 3.

A study of the prices of butter, margarin, lard, lard substitutes, and vegetable oils, presents some interesting comparisons.

As lard substitutes average about 93 per cent. vegetable oil, the prices of lard substitutes follow cottonseed-oil prices, ranging about 4 cents to 5 cents higher. The higher grades of lard apparently do not compete directly with lard substitutes, but lower grades are in direct competition. The price of lard is the

fore influenced somewhat, but not controlled, by the price of cottonseed oil. It is probably affected more by the price of hogs. This influence is illustrated by relative prices in September, October, and November, 1920, when lard prices advanced though cottonseed oil prices declined.

Prices of creamery butter of 92 score or better fluctuate independently of butter substitute prices, and even the prices of lower grades of butter are not directly controlled. It is interesting to note that margarin prices remain fairly stable, while butter prices show wide and rather frequent fluctuations. The stability of margarin prices is probably due in part to controlled production and marketing, while butter prices show the usual fluctuations of commodities whose production and marketing are uncontrolled.

Table 1—Lard and Lard Substitute Production

Year	Lard* Pounds	Lard substitutes Pounds	Total production Pounds	Lard substitutes—Per cent of total production
1920 .....	1,936,000,000	†1,000,000,000	2,936,000,000	34
1918 .....	2,089,000,000	†1,146,000,000	3,235,000,000	35
1917 .....	1,577,000,000	†1,173,000,000	2,750,000,000	42
1916 .....	1,973,000,000	†1,027,000,000	3,000,000,000	34
1914 .....	1,652,000,000	†1,137,000,000	2,789,000,000	40
1912 .....	1,643,000,000	†877,000,000	2,520,000,000	35

\*Figures compiled by Bureau of Animal Industry, U. S. Department of Agriculture.

†Estimated.

‡Supplement to Bulletin 769, U. S. Department of Agriculture.

Table 2—Butter and Butter Substitute Production\*  
(In thousands of pounds; i. e., 000 omitted.)

Year	Butter—farm and factory Pounds	Butter substitutes Pounds	Total production Pounds	Butter substitutes—per cent. of total production
1920 .....	1,442,458	370,730	1,813,188	20
1919 .....	1,558,900	371,317	1,930,217	19
1918 .....	1,530,700	355,536	1,886,236	18
1917 .....	1,568,890	290,902	1,856,792	15
1916 .....	1,635,000	202,444	1,837,444	10
1914 .....	1,706,000	143,900	1,849,900	7
1909 .....	1,621,700	110,000	1,731,700	6

\*Estimated.

Table 3—Margarin Production 1916-1920

	1916 Pounds	1917 Pounds	1918 Pounds	1919 Pounds	1920 Pounds
Margarin (uncolored)					
Combined animal and vegetable oil .....	177,264,474	254,440,884	255,196,572	214,759,089	165,178,136
Animal oil exclusively....	15,479,588	7,562,741	3,306,671	3,391,206	4,444,924
Vegetable oil exclusively.	1,941,932	21,803,482	88,861,472	132,906,154	186,569,182
Margarin (colored)					
Combined animal and vegetable oil .....	7,198,937	6,958,211	7,056,442	9,302,681	9,426,812
Vegetable oil exclusive.y.	.....	725	112,494	9,792,694	4,969,828
Animal oil exclusively....	559,130	136,889	1,002,864	1,165,363	141,167
Grand total .....	202,444,064	290,902,932	355,536,515	371,317,187	370,730,049

## Georgia Wholesalers Re-elect R. B. Small President

Addressing the first session of the Georgia Wholesale Grocers' Association, held at Macon, Ga., and which was attended by about 75 members of the association and manufacturers' representatives, R. B. Small, president of the association, declared that the wholesalers must adopt some change if they are to continue in business, and suggested that some plan of merger be put into effect, which he said is the only way to eliminate chain stores.

Mr. Small was re-elected president. George W. Walker, of Walker Brothers Company, Atlanta, Ga., was elected vice-president, and R. J. McDonald will continue to act as secretary-treasurer.

### 139 Companies Manufacturing Glass Bottles and Jars

In a comparative summary of statistics for the glass industry of 1919 and 1914, issued by the United States Census Bureau, there were 139 establishments manufacturing bottles and jars, etc., in 1919, as against 150 in 1914, but the value of the production was \$87,762,000 in 1919, and \$51,959,000 for 1914.

W. E. Humelbaugh, who for many years has been advertising manager of the Genesee Pure Food Company, Le Roy, N. Y., manufacturer of "Jell-O," has been appointed advertising counsel of that company, and is succeeded as advertising manager by F. L. La Bounty, who has been assistant advertising manager.

Paul S. Armstrong has been appointed advertising manager of the California Fruit Growers' Exchange, Los Angeles, Cal., to succeed Don Francisco, whose resignation took effect May 1. Mr. Armstrong had been assistant to Mr. Francisco for the last four years.

Ralph M. Beckwith has resigned from the Lippincott Company, food products, Cincinnati, Ohio, to engage in the food brokerage business with his father, under the firm name of Gruner & Beckwith, at 25 West Second Street, Cincinnati.

C. D. Standeford, formerly with the California Honey Producers Co-Operative Exchange, has been appointed assistant sales manager of the California Associated Raisin Company, and Miss Votta Jinks has been made assistant advertising manager.



## Jobbers Form Educational Committee

### Wholesale Grocers Discuss Their Present Financial Situation at Chicago Meeting

A group of wholesale grocers met in Chicago last month upon call of O. J. Moore, of Sioux City, Ia., to discuss the present financial situation in the wholesale grocery trade and take appropriate steps toward a remedy.

With the decline in prices that has occurred in recent months and the falling off in sales, there has been a marked increase in the percentage of expenses with relation to sales. While sales have declined in many instances by an amount equal to 33 1-3 per cent. or more, operating expenses, it was stated, have not been reduced to any appreciable extent, and the result is that these expenses, which were formerly about 8 per cent. of sales, now amount to something like 14 per cent. of sales. General and administrative items, such as rent, insurance, taxes, executive salaries, etc., are practically fixed and cannot be changed. It has also been found impracticable by most wholesale grocers to reduce salesmen's compensation to any considerable extent. Some reduction in expenses has been effected by laying off warehouse help and other employees, and wages and salaries have been reduced in many instances, but not in the proportion to the decline in sales.

As the wholesale grocer operates on a very small margin of net profit, usually about two per cent. on sales, the situation among wholesale grocers has become serious, and it was the thought of those who called the Chicago meeting that ways and means could be discovered for relieving the situation, either by increasing the margin of gross profits or by reducing the operating expenses.

#### Need of Introducing Economies

In the addresses that were made at the meeting emphasis was laid upon the need of introducing economies in the conduct of the wholesale grocery business and of eliminating practices which decrease gross profits. As illustrating the latter point, frequent reference was made to the price-cutting tactics which have characterized competition among grocery jobbers and the members of the trade were urged to cease the custom of giving their salesmen the cost price of goods, with the idea that by quoting the single price at which goods are to be sold, price cutting would be reduced. There appear to be unanimous sentiment that the trade has gone too far in "letting the salesmen run the business."

As to economies, emphasis was laid upon means of increasing the rapidity of turnover. The means suggested were departmentization of the business to enable the jobber to keep closer track of his stock. The desirability of paying closer attention to inventories and of keeping adequate stock records was also discussed.

Several speakers suggested that by departmentalizing the business and keeping records which would show the cost of handling groceries by departments, the trade would be enabled to know more definitely what margins are required to handle the various lines. For example, considerable interest centered in tobacco and it appeared to be the consensus of opinion that the present discount allowed by manufacturers is not sufficient to yield a net profit, if tobacco is required to bear its due share of operating expenses. The general idea expressed was that by keeping more adequate cost records the wholesalers would find that some lines are not handled profitably, and that one of two things should be done: Either the unprofitable lines should be dropped or the manufacturer should allow a larger discount.

#### Assessment of \$15 Levied

After a day spent in discussing all phases of the problems which now con-

front the grocery trade, the convention got down to business on the morning of the second day and considered what steps should be taken to put in effect the ideas which had been expressed. It was voted to levy an assessment of \$15 upon each house which was represented at the meeting, for the purpose of printing the proceedings and sending a copy to all wholesale grocers. There was considerable discussion as to the formation of any new organization and there was unanimous agreement that it would not be wise or necessary to establish any new association but that a committee should be appointed to deal with the present emergency. Accordingly O. J. Moore, of Sioux City, Iowa, who was acting as temporary chairman, was authorized to appoint a committee and he named the following men: B. D. Crane, Fort Smith, Ark.; W. N. Todd, Leavenworth, Kans.; Herman S. Zeuch, Davenport, Ia.; Howard L. Humphries, Bloomington, Ill.; Carl J. Schlapp, St. Louis, Mo.; E. P. Schoentgen, Council Bluffs, Ia.; John G. Clark, Bad Axe, Mich.; T. H. Kinnear, Toronto, Can.; A. C. Pyke, Toronto, Can.

This committee will undertake a survey of the wholesale grocery business and submit the results to every wholesale grocer in the United States and Canada. This survey will be made by the Bureau of Business Research of New York University, under the direction of Dr. Lewis H. Haney, assisted by J. Frank Grimes of the William W. Thompson and Company, accountants, Chicago.

#### To Prevent Unsound Merchandising

The composition of the meeting was largely of Middle-Western jobbers although there were representatives present from the East and from the Pacific Coast.

The most definite suggestion which was made for future work was that, in addition to the publication of the proceedings, there should be a publication designed to improve the wholesalers' business by suggesting certain principles of efficiency which would tend to reduce operating expenses and to prevent unsound merchandising. It was suggested that a scheme of departmentization which would be practicable for concerns of different size, should be promulgated with the hope that it might become the standard practice in the trade. This might be accompanied by cost data which would show the expense of handling the lines contained in the several departments and serve as the basis for greater uniformity in the gross profits of such departments. It was also thought that a definite suggestion concerning the best method of paying salesmen would be timely.

Mr. Moore stated that this whole idea in calling the meeting had been an educational one and that he hoped that, in view of the exigencies of the time, if a few well chosen and practical suggestions could be made, they would be widely adopted and would serve as a basis for sounder methods of merchandising. In this general idea the New York Bureau of Business Research, represented by Dr. Lewis H. Haney, and J. Frank Grimes, representing William W. Thompson and Company, accountants, were inclined to agree. Dr. Haney and Mr. Grimes now have under consideration plans for the preparation of a small volume covering ground similar to that suggested by Mr. Moore.

The Blanton-Sparrow Co., wholesale grocer, Charlotte, N. C., which has been doing business at 35 South College street has sold its business to Charles Moody & Company, wholesale grocers, on the same street.

## Canada's Exports of Foods Increase

### Large Gains Recorded in the Last Ten Years on Many Products

A large increase in Canada's export trade in foodstuffs in the last ten years, is cited in a consular report from Kingston, Ontario. Canada's apple crop last year resulted in increased shipments, figures for the nine months' period totaling \$4,742,189, as against \$1,112,189 in the same months of 1910. Of dried apples, \$242,448 worth was exported last year, as against \$125,506 in 1910. Berries of all kinds were exported to the value of \$371,884 last year and \$82,615 in 1910. The figures for canned and preserved fruits in April-December, 1920 and 1910, are, respectively, \$607,447 and \$177,999.

A very large increase is shown in the figures for flour, the value of the export trade in this commodity being more than four times as much as in the corresponding period in 1910. Last year in the nine months ending with December, Canada exported wheat flour to the value of \$46,111,590, as compared with \$10,170,041 in 1910. On the other hand, it seems that prepared cereal foods, except oatmeal and rolled oats, had a larger market in 1910 than in 1920, the total in the first-mentioned period being \$1,302,162, compared with \$632,948 in 1920; for oatmeal and rolled oats, however, the figures were \$360,978 in 1910, and \$1,883,264 in 1920.

Potatoes filled a large export order for Canada, the total for the nine months under review being \$8,851,086; in 1910 the total was \$549,932. Canned vegetables were not heavily exported last year, the value being \$348,407—comparing, however, with \$27,247 in 1910.

Condensed and canned milk and cream, for example, were exported in April-December, 1920, to the extent of \$6,997,697, as compared with \$395,493 in the corresponding period of 1910. However, fresh-cream shipments were more nearly equal in value—\$1,595,317 in 1910 and \$1,862,682 in 1920.

Canada's apples have always been in good demand abroad, and the large crop in Canada last year resulted in increased shipments, figures.

To the provision markets of the world, but chiefly of Europe, Canada made the following shipments: Cheese, with a total valuation of \$33,707,317 for the nine months of last year, as compared with \$19,153,680 in April-December, 1910; bacon and ham, \$23,319,104 in 1920, as compared with \$5,657,983 in 1910; other pork, \$635,352, compared with \$35,611; beef, \$7,364,074, compared with \$59,393; mutton and lamb, \$1,581,297, compared with \$1009; poultry, dressed and undressed, \$415,852, against \$17,832; canned meats, \$204,167, against \$32,163; butter, \$4,491,055, against \$681,336; eggs, \$3,670,543, against \$21,391; lard, \$358,262, against \$20,475; and honey, \$7,733, against \$802.

Canada's total fish exports in the nine months under review totaled \$26,511,288, as against \$11,699,953 in the corresponding period of 1910.

Two commodities in the way of foodstuffs which were not listed among the exports from Canada in 1910, and which last year and during the war found a very large European market, were macaroni and confectionery. Macaroni exports in 1920 (nine months) totaled \$180,703; exports of confectionery in this period aggregated \$1,120,117. Canada's exports of sugar (other than maple) amounted to \$11,809,753 in April-December, 1920, and to \$1,525 in the like period of 1910.



## War's Effect on International Meat Trade

### No Surplus of Beef in United States—Pork This Country's Greatest Exportable Meat

Popular misunderstanding is magnifying the superficial fact that this country has a beef surplus—a surplus that has had a precarious existence both before the World War and since. There is something more to the story than the exports of several hundred million pounds of beef and its products in a year. To the extent that this is balanced by imports of beef, beef products and beef cattle, it is not a surplus, according to the Bureau of Crop Estimates, United States Department of Agriculture.

Not only did the imported exceed the exported beef in 1914, but the equivalent beef and its products and edible offal of the cattle imported from Canada and Mexico greatly exceeded the exports of beef cattle, so that, within the scope of the terms here used, the United States was a deficiency country with respect to beef in that year to the extent of 480,000,000 pounds. Similarly in 1915, the national beef deficiency was 92,000,000 pounds.

War demands turned the tide in 1916, when the national surplus of beef was 153,000,000 pounds; in 1917 it was 206,000,000 pounds; and in 1918 the surplus was 576,000,000 pounds.

But the debits so far offset the credits in 1919 that the beef surplus fell to 59,000,000 pounds, or less than one per cent. of the production, including edible offal.

The United States has been a surplus mutton country, since 1913, only in 1918 and 1919, by 1,000,000 and 5,000,000 pounds, respectively.

On the other hand, the enormous export of pork and its products has been unfailing year after year for a great many years, with totals of hundreds of millions of pounds, even extending beyond two and one-half billion of pounds in 1919.

With regard to excess of either production or consumption of beef and mutton, this country may be said to be in a seesawing position, except as influenced by such high-priced foreign demand as that of a great war. After all, the constant great national meat surplus is one of pork and its products.

#### War's Stimulus to Meat Exports

Meat was exported by the surplus countries of the world in greatly increased quantities in response to the war's demands. The better to understand this, continues the Bureau of Crop Estimates, it is well to compare the change in supply for the five years, from 1913 to 1918, with the change for the 18 years from 1895 to 1913, or a period 3 3/5 times as long.

The total exports of all kinds of meat increased by one-half in each period; animal fats and oils gained by one-fifth in the earlier period, but remained stationary in the war period; mutton nearly doubled in the earlier period, but declined about one-half in the later one, or to the original quantity; pork gained only one-tenth in the 18 years, or hardly at all, yet it almost doubled in the five years.

What was substantially the world's export meat trade of the surplus countries in 1895 was 2,734,000,000 pounds, as determined by the Bureau of Crop Estimates; by 1899, the quantity had risen to 3,537,000,000 pounds; and by 1913, the year before the World War began, it was 4,101,000,000 pounds. In 1918, the last year of the war, the world's export meat trade was 6,460,000,000 pounds.

#### Meat Imports Focused by War

Distribution of the world's exports of meat was naturally greatly changed by

war. From the point of view of imports, the United Kingdom, which had for many years taken 62 per cent., or more of the world's total, increased its share to 75.4 per cent. in 1914, and received 70 per cent. in 1915 and 1916, 67 per cent. in 1917, and 69 per cent. in 1918. France's share of the world's meat imports increased from 1.8 to 15.9 per cent. from 1913 to 1918, and Italy's from 2.1 to 10.3 per cent. The three countries named took 68 per cent., or two-thirds, of the world's total meat imports in 1913, and 95 per cent. in 1918, or almost the entire quantity.

#### New Sources of World's Meat Supply

Brazil, China and British South Africa rose to some prominence during the World War as exporters of meat, Brazil especially. From a normal export of 1,700,000 pounds of meat from Brazil in 1913 and 1914, the quantity jumped to 94,000,000 pounds in 1916, to 230,000,000 pounds in 1917, and to 251,000,000 pounds in 1919 of which 146,000,000 pounds was beef, 46,000,000 pounds pork, and 59,000,000 pounds unidentified meat.

China was exporting yearly about 50,000,000 to 65,000,000 pounds of beef and pork from 1912 to 1915. The quantity became 101,000,000 pounds in 1917, and rose to 148,000,000 pounds in 1919. From British South Africa, meat exports, mostly beef, increased from about 500,000 pounds at the time the war began to 18,000,000 pounds by 1916, and to 46,500,000 pounds by 1919.

#### Beef vs. Pork

The war changed the United Kingdom's imports of pork and its products from 29 per cent. of all meat imports in 1912 and 1913 to 34 per cent. in 1916, to 40 per cent. in 1917, and to 50 per cent. in 1918, weighing 1,656,000,000 pounds. The fraction for beef was about 47 per cent. before the war, and it fell to 39 per cent. by 1918. In the last months of the war, the foreign hog had become of more importance to the United Kingdom than the foreign steer.

France increased its imports of beef relative to total imports of meat from 45 per cent. in 1913 to 75 per cent. in 1915, after which year the fraction declined to less than 65 per cent. in 1918, or to 493,000,000 pounds.

### Predict Diminished Canned Goods Pack for 1921

A prophecy of a 40 per cent. pack of canned goods this year was the opinion expressed at the thirteenth annual convention of the Baltimore Canned Goods Exchange held in Baltimore, Md. According to reports received, the canned goods industry is in an unsettled condition owing to the unstable prices of commodities that enter into packing as well as the labor situation. Added to this is the fact that the Government still has large quantities of canned goods on hand that are being placed on the market periodically, which naturally tends toward upsetting the business and makes the jobber cautious about buying for future sales.

#### Robert Gair Company Moves General Offices to New York

The Robert Gair Company, manufacturer of folding paper boxes, shipping cases, window display advertising, etc., has moved its general offices from its Brooklyn plant to the new Borden Building, 350 Madison Avenue, New York City. The change makes the company's headquarters more accessible to out-of-town customers who visit New York.

### British Inspection of Condensed Milk Imports

The British Minister of Health has recently drawn up a new draft of regulations with reference to the importation of condensed milk, including evaporated and concentrated milk, but excluding dried milk. The provisions of the proposed regulations pertain only to condensed milk imported for human consumption and not to condensed milk which is to be reexported or to be used only for manufacturing purposes. Although the new regulations have not yet been officially announced it is believed that the British Minister of Health will issue notice of their enforcement in the near future.

Under the proposed regulations no person in England or Wales can import condensed milk for human consumption unless the composition of the milk complies with the standards set forth and unless the milk is contained in a receptacle labeled in the manner prescribed. Samples of all importations of condensed milk will be taken by an officer of customs and excise and delivered to the Government chemist for analysis. Pending the result of the chemical analysis the consignment of condensed milk from which the sample was taken can not be removed from the place where it was deposited without the written permission of the sanitary authority.

Whenever a sample of condensed milk intended for human consumption does not comply with the required standards, or whenever the milk is deposited in a ship or warehouse contrary to the provisions of the regulations, the sanitary officer or the officer of customs and excise may serve a notice on the master of the ship or the importer requiring that the consignment shall not be removed without the written consent of the sanitary authority.

The first schedule of the regulations applies to standards for condensed milk. In this schedule all condensed milk must comply with one of the following standards:

Description	Per Cent. Milk fat, not less than—	Percentage by weight of all milk solids including fat, not less than—
(1) Full cream, unsweetened	7.8	26.5
(2) Full cream, sweetened...	9.0	30.0
(3) Skimmed, unsweetened...	..	20.0
(4) Skimmed, sweetened ....	..	26.0

The second schedule of the regulations applies to the rules with respect to labeling the condensed milk. An entire copy of the draft regulations as made by the British minister of health will be sent to anyone interested upon request to the U. S. Bureau of Markets for G-32621.

#### Shelled Peanuts Reported in Fairly Active Demand

A feature of the peanut movement this season has been the generally steady demand from the salting trade for shelled peanuts of the Spanish variety. Manufacturers of peanut butter have not had so heavy a business as the salters. This dullness is perhaps a result of the marked decrease in the prices of dairy butter. The demand from the confectionery trade has been light since the holidays. A somewhat better inquiry has developed in the peanut oil trade but the demand from this source is comparatively light. Moreover, crushers are somewhat reluctant to enter into agreements to furnish peanut oil because of their inability to dispose of the peanut meal and cake which is left after the oil is extracted.



## Says Jobber Should Operate Chain Stores

### R. J. Macdonald of Georgia Association Declares Wholesale Grocer Is Logical One to Run Them

In an analysis of the chain-store situation as it affects the wholesale grocer, R. J. Macdonald, secretary-treasurer of the Georgia Wholesale Grocers' Association, says in a bulletin issued by that association that, "provided chain stores, with their special privilege are legitimized, then the logical person to operate them is the wholesale grocer." This bulletin reads in part as follows:

"In order to reach the truth, it is absolutely necessary to look at every problem we have to face, not alone from our viewpoint, but from the viewpoint of everyone in any way interested in the solution and outcome of the matter under consideration. If we look at the question purely from our own side, we are not only apt, but will reach a prejudiced decision. It is very difficult to be fair to the 'other fellow' when his ideas are different from ours. However, it is not impossible.

"The chain store—which we have claimed is an economic wrong because of one thing only—its special privilege as a buyer in one class, the wholesale class, and a seller in another class, the retail class—is claimed to be an economic necessity and a legitimate method of business by many economists today. Their contention is that there is a field for such a method of distribution in our congested areas, and that there is a more economical way of distributing foodstuffs, and does supply the consumer where it operates with the necessities of life at a less price than through the old regular channels of trade, the wholesale and the independent retail grocer.

"We shall start by granting that this hypothesis is true. Not because we are convinced it is, but in order to have a common ground from which to start our study of the question.

"The chain store's weakness is in spreading out. As long as it confines its operation to one city—under its present special privilege—it is almost impregnable, provided, of course, it is well managed. In their anxiety to do a larger and larger volume, in their anxiety to control the whole situation, many chain stores are opening branches further and further away from their bases, and each branch, instead of strengthening, is weakening their organizations.

"The logical operators of chain stores are our present wholesale grocers. They should continue to be wholesale grocers, not chain stores, but should have chain stores in their own home markets. They then could continue to get their volume in their home market, and this volume would be certain, on a profitable basis, while at the same time, because of this volume at home, they would be enabled to fulfil their obligation to society by serving the country even better than before. The country would not have to pay exorbitantly for the city's privilege of having the chain store, and the wholesale grocers' present plants, with all their machinery for handling this class of business, would be amply sufficient to handle it in this way.

"There are many savings which would come to the wholesale grocer by his making this change. His trucking expense could be greatly reduced as he would know exactly where his trucks would have to go each day, and he could adopt 'sidewalk delivery' to his own stores. His buying power would be greater, and his outlet for selling his stock would be much improved, as it is a fact that goods displayed in the retail store are half sold. His turnover could be greatly increased, and in many other ways he would reap a benefit.

"To us, therefore, granting the chain store, with special privilege, has come

to stay, the logical and only method of working for the best interest of the public seems to be that the wholesale grocer should own and operate a system of chain stores in his home market, if it is large enough to justify it, and at the same time continue to serve his other customers to better advantage than before. Competition will thereby be preserved and the present unfair competition will be done away with."

### Australian Jams Now Largely Used in England

According to recent advices from England, the war has been the making of the Australian jam industry. The effect of the wartime demand for Australian jams is apparent in the official figures.

In the early days of the Australian jam industry the success of the export trade was spasmodic and possibilities of a lucrative market in Great Britain were small owing to the powerful competition of other countries, notably Canada and the United States.

Today, however, the Australian export trade in jams and preserves is an active one.

### Wisconsin Leads in Canned Pea Industry

More than \$16,000,000 invested in the pea canning industry of Wisconsin and an output of peas for 1919 worth more than \$12,000,000, place Wisconsin in first rank in the pea canning industry, according to a bulletin issued by the Agricultural Experiment Station of the University of Wisconsin.

Wisconsin's 1919 pack of peas amounted to 4,317,000 cases or over 103,600,000 cans. This was almost one can for every man, woman and child in the United States. Facts from 22 factories out of 88 plants in operation during 1919 indicate that consumers cannot consider canned peas a farm product only. The average cost of canning over 30,000,000 cans of peas was 10.21 cents each. This was distributed among farmers, can manufacturers, makers of box parts, and others whose services were required in making the finished product from the raw materials.

About 56,672 acres were devoted to the growing of peas for canning in Wisconsin in 1919 according to figures from pea canning factories. Four-fifths of this land was owned and cultivated by farmers; one-fifth was owned and cultivated by pea canning companies. At a valuation of \$200 per acre, farmers had \$9,099,200 worth of land devoted to the growing of peas, while the canning companies had \$2,235,200 worth of land for the same purpose.

Factories sold their canned peas at an average price of \$2.77 per case containing two dozen No. 2 cans. Out of the 11.53 cents received for each can of peas, the farmer or grower of green peas was paid 3.04 cents, cans cost 2.62 cents, boxes .6 cents, all other factory and selling expenses amounted to 3.94 cents, and profits of factories before income taxes were deducted, averaged 1.32 cents.

### S. W. Roth, Publisher Dead of Heart Failure

S. W. Roth, of Chicago, well known as a publisher of grocery trade papers, died suddenly of heart failure, from which he had been suffering for some time in the past. Mr. Roth was owner and editor of "The Wholesale Grocer" and "The Retailer's Journal."

### New Contract Forms Completed by Wholesalers

The contracts committee of the National Wholesale Grocer's Association has completed work on the new canned food contracts form, and announces that it is now ready for distribution to the trade.

A large number of forms were studied by the committee in its work. In expectation of a heavy demand, a large order has been placed with the printers for pads of forms, so that an original and a duplicate of the contract can be made at one time. There will be no charge for the forms.

As set forth in the new contract, terms will be as follows: "70 per cent payment against draft, five days' sight, less 2 per cent, and balance on arrival, prompt examination and approval; or all cash, less 1½ per cent., five days after car is available for examination; or thirty days net; buyer's option."

The certificate of car loading as covered in the contract is as follows:

"(Carbon copy to be presented with invoice to save loss and damage claims and deduction).

"The undersigned hereby certify to the following service:

"We have

"Inspected car No. — for leaky roof, walls and doors, nails, bolt heads, blocks and braces that might injure contents, and we have protected against them.

"Cleaned car of dirt, filth, oils and grease, or have covered same to protect contents loaded by us.

"Sealed all containers in accordance with the classification, outside flaps meeting, boxes square and true and flaps thoroughly sealed over the entire surface. Wooden cases have solid or closely fitting sides, ends, tops and bottoms securely fastened and no broken parts exposing contents.

"Loaded the contents with cans on end, spaced the rows to fit the car walls snugly in width and length, with no space between rows or tiers.

"Braced boxes loaded above the grain lining and braced boxes in uneven rows and boxes forming incomplete top layers and boxes about car doors to avoid shifting and rubbing. (Bracing while especially important on long hauls, is needed on all cars on account of switching.)"

### West Virginia Wholesale Grocers Re-Elect Officers

One hundred and fifty wholesale grocers, representing all sections of the State, attended the eleventh annual convention of the West Virginia Wholesale Grocers' Association, at Parkersburg, W. Va., and elected officers for the coming year.

W. C. McConnaughey, of Parkersburg, was re-elected president, and other officers were re-elected as follows: Treasurer, J. B. Stevenson, Huntington; Vice-president, E. E. Wagner, Wheeling; E. S. Moore, Parkersburg; Robert Morris, Clarksburg; William Gulland, Elkins; J. W. Hubbard, Charleston; J. L. Alexander, Bluefield; and C. A. Miller, Martinsburg.

### Will Introduce Canned Green Turtle in East

The California Pacific Sea Food Company has decided to make permanent its temporary offices at 105 Hudson Street, New York, and under the direction of W. E. Walker, vice-president of the company, carry on an intensive campaign in the East in an endeavor to so popularize canned green turtle that it will replace mock turtle.

### Nucoa Butter Company Moves

The Nucoa Butter Company, refiner of edible nut oils and churner of nut margarin, announces its removal from the Woolworth Building, New York, to 297 Fourth Avenue, New York.



## Declares Shortage of Sugar A Myth

Never Was Any Real Scarcity, Says C. A. Spreckels

There never was a scarcity of sugar in this country, according to C. A. Spreckels, president Federal Sugar Refining Company, but during the period of the Food Administration, the price of sugar is said to have been held up by manipulation and artificial measures. There was always a surplus in some parts of the country and a scarcity in others. While New York suffered from a so-called sugar shortage, certain sections of the West were glutted.

"The supply of sugar in this country is the largest ever recorded, there being a surplus of over 1,000,000 tons in warehouses," said Mr. Spreckels. "It is estimated that at the ports of Cuba there are 1,000,000 tons stored. Mills are still grinding, and the weekly accumulation down there is over 100,000 tons.

"This country is full up of sugar, and I believe there are about 500,000 tons of beet sugar unsold at the present time. I believe the carry over at the end of this year will be even greater than last year. The European demand for sugar is a myth. Some European nations couldn't buy sugar if they wanted to, as they have no money.

"The beet sugar growing countries are increasing their sowings. According to the latest figures Germany has increased its sowing 18 per cent., Holland 10 per cent. and Czecho-Slovakia 8 per cent. With these new crops coming along Europe will be fairly well supplied with sugar.

"An effort was made to stimulate buying of sugar by statements that prohibition would increase consumption. It was said that consumption would reach at least 5,000,000 tons. The latest figures prove that prohibition made no difference to sugar consumption.

"Sugar consumption in the United States in 1920 was only 4,084,000 tons, as contrasted with 4,067,000 tons in 1919. The slight increase can be accounted for by the natural increase in our population."

## Improving Conditions in Meat Packing Industry

If the tone of trade in the meat packing industry is any barometer of changes in general industrial conditions, American business can find some cause for encouragement in April developments.

These developments included the following significant facts:

1. Packers do not disguise the fact that many products are selling below the cost of raw materials plus manufacturing and selling expenses, but—

2. Some European countries which for months past practically had confined their buying to purchases from stocks already abroad ordered meats for shipment from America.

3. The British demand assumed somewhat larger proportions, but the effect of the heavy stocks of meats held by the British for some time and the uncertainty of the English industrial situation reasserted their influence, and at the end of the month the trade slackened.

4. Hides began to move into market channels. Hide quotations ceased to be merely nominal figures. Although the trade in hides almost ceased at the end of the month, its revival bore witness to the improvement in the shoe industry—an improvement in which other industries will inevitably share.

5. The Southern demand for pork exhibited a decided improvement.

6. Although wholesale beef prices declined still further during the early part of April, the trade later showed improvement and the demand was broader—a good sign for American industry as a whole.

7. There is considerable evidence that traders have ceased to be afraid to buy; that there has been, to a degree at least, a restoration of confidence and a conviction that values are stabilizing.

If these factors have significance outside of the meat industry, they mean a great deal to all businesses dealing in necessities and perhaps indicate, though more remotely, a favorable prospect for industries producing commodities which are not absolute essentials.

## Allied Packers, Inc., Readjustment Plan Ready

A readjustment committee has completed plans calling for the readjustment of capitalization and financial affairs of the Allied Packers, Inc.

It is proposed that the company shall amend its certificate of incorporation so to authorize stock and securities in place of those now outstanding as follows: Eight million dollar first mortgage and collateral trust convertible sinking fund 8 per cent gold bonds, \$8,000,000 prior preference preferred stock, \$6,250,000 preferred stock and 200,000 shares common stock without nominal or par value.

The statement by the committee points out that since the Allied Packers, Inc., was organized up to February 26, 1921, a deficit of about \$4,000,000 has been sustained and the shrinkage in its quick assets over and above current liabilities indicates that there may be early default covenants of the company contained in the trust indenture securing its debentures and that this condition may prevent it from obtaining the banking loans and credits required for the adequate and continued operation of its properties.

The Allied Packers, Inc., was incorporated under the laws of Delaware, representing a merger either through purchase of capital stock or acquisition of physical properties of the assets and business of the following companies engaged in the packing house business: Parker, Webb & Co., Detroit; C. Klinck Packing Company, Buffalo; F. Schenck & Sons Co., Wheeling, W. Va.; Matthews-Blackwell, Ltd. (new Canadian Packing Company, Ltd.); W. S. Forbes, Richmond, Va.; Macon Packing Company, Macon, Ga.; Batchelder & Snyder Company, Boston, Mass., and Charles Wolff Packing Company, Topeka, Kan.

The president of the concern is J. A. Hawkinson, of Chicago.

## Condensed Milk Moving Slowly; Evaporated Is Active

Manufacturers of evaporated milk report conditions to be greatly improved for that commodity. The reduction of unsold stocks of approximately 44 per cent. on April 1, as compared with March 1, and an increase in unfilled orders of 279 per cent. confirms this report. Price of evaporated milk during March showed little change, with a range of \$4.42 to \$6 and an average price of \$5.61 per case. Unsweetened evaporated whole milk, in bulk, sold at \$9.62 per cwt., while unsweetened evaporated skimmed milk sold for \$5.06. The exports of evaporated milk during March, 1921, were approximately 500,000 pounds less than in March, 1920, when the amount exported amounted to 19,318,000 pounds. Of the shipments during March, 1921, 5,750,000 went to Germany, 3,500,000 to Poland and Danzig, and nearly 8,500,000 to the United Kingdom.

The market for sweetened condensed milk has been distinctly draggy, both for bulk and case goods. Unsold stocks of case goods in the hands of manufac-

turers were reduced 41 per cent. during the month of March, but on April 1 the unfilled orders were practically nil compared with the stocks in the hands of manufacturers. The price of sweetened condensed case goods ranged from \$5.25 to \$10 per case during April, with an average of \$7.97 which was 7 cents per case less than the average price for February. There has been a very limited demand for sweetened condensed bulk goods and the range in prices has been rather wide. The average price for the month of March for sweetened condensed whole milk, in bulk, was \$11.79 per cwt., with sweetened condensed skimmed milk selling at \$6.75 per cwt. The downward trend in the price of sugar should help out the manufacturers of sweetened condensed milk. Exports of condensed milk during March were 29,000,000 pounds, or one-third the exports for the same month during 1920.

## Olive Oil Importers Oppose Tariff

In a protest against the proposed increase in tariff on olive oil, twenty-five of the leading importers of that commodity, presided over by R. U. Delapenha, of R. U. Delapenha & Company, New York, met in the assembly room of the Italian Chamber of Commerce in New York, to open the fight against an advance in duties.

The proposed increase would raise the tariff on imported olive oil from 20 cents to 50 and 75 cents a gallon, and it was stated at the meeting that if the present base cannot be continued, the increase should be small, and in no event greater than 100 per cent.

Mr. Delapenha said: "The question is, is the tariff a political or an economic issue? If it is a political matter, our complaints and protests are futile, and if it is an economic issue, then there is no excuse for giving protection to an industry that cannot hope to care for this nation's needs for many years to come. We must have foreign olive oil and if a higher duty is put thereon it can only mean that the consumer will have to pay the difference.

"We have trouble enough in selling olive oil at present low prices. It has been claimed by propagandists, for a higher tariff on olive oil that the cost of production in this country is \$1.63 a gallon, against an average of 98 cents a gallon in Europe. These figures can be refuted, but it is not an important point at issue. The fact remains that California cannot supply the country's needs. Moreover, many sardine packers have complained that they cannot use domestic olive oil in canning and their demand has been for Spanish, Italian, Grecian and North African oils."

## War Finance Corporation Will Finance California Packing Exports

Announcement has been made from Washington that the War Finance Corporation is prepared to make advances for financing exports of California packing products. Banks in that State have been advised, the corporation said that applications for advances would be considered on the basis of prompt shipment against deferred payments; for future shipment within a reasonable time against either prompt or deferred payments after arrival of the goods in foreign countries, where goods are under definite contract for sale, and prompt shipment to warehouses in foreign distributing points, to be held there for account of American exporters and bankers for marketing out of warehouses.

## Unable to Market Vermont Maple Syrup

Producers of maple sugar in Franklin County, Vermont, have met with difficulty in attempting to market their commodity at more than 60 to 75 cents a gallon in barrel lots, and the banks are offering financial assistance to tide them over until a suitable market can be found.



# New Canned Goods Contract Adopted

## Wholesale Grocers' Association Presents New Form to Cannery

The contract committee of the National Wholesale Grocers' Association has submitted to its members a new form of contract, which it suggests be used in making all purchases from canners, and the chief feature of which lies in the clause governing future deliveries. Besides providing for prompt shipment of all canned goods bought for future delivery, the contract places an absolute check on all deliveries by providing that:

"Seller agrees to provide for sufficient acreage on basis average crop yield to cover all goods sold. If causes beyond sellers' control prevent full delivery, buyer will accept 75 per cent delivery, with all other buyers of same grades. If seller does not make 75 per cent delivery, he shall pay buyer an amount equal to 1 per cent of the price for each 1 per cent reduction below 75 per cent of total quantity herein purchased, but in no case shall delivery be less than 50 per cent."

The contract further provides that:

"Goods sold for future delivery shall be shipped during packing season, or not later than 30 days after packing season closes."

"Buyers shall have privilege of reducing quantity to 75 per cent of total quantity herein, provided he mails seller written notice before packing season opens."

Special guarantees asked of the sellers provide: "Seller shall ship in bright merchantable cans."

"Goods sold before or during packing season are guaranteed against spoils, swells, leaks and springers, until September 1, of following year. Subject to requirements of food and sanitation laws, and except for cans cut, spoils, swells, leaks and springers shall be held subject to sellers' order. Sellers shall reimburse buyer at contract price for spoils, swells, leaks and springers."

"Goods sold after packing season are guaranteed against spoils, swells, leaks, and springers to September 1, following date of sale, provided, however, that such guaranty shall in every case continue for at least six months after date of sale."

The usual label allowance is contained in the revised contract.

Packing is also provided for, as follows: "Shipment shall be made in well nailed, standard wooden cases, unless otherwise specified in contract; all cases and containers shall comply with tariff schedules filed with Interstate Commerce Commission."

Liability is provided for by "In case of destruction of business property or either party by fire or other accident, contract may be canceled upon prompt written notice to the other party. In case of partial loss to seller's property undamaged portion of goods shall be delivered pro rata on unfilled contracts."

"All disputes arising under this contract shall be arbitrated in the usual manner, unless there is a regular arbitration committee appointed by the National Wholesale Grocers' Association and National Canned Foods and Dried Fruit Brokers' Association, and indorsed by the National Cannery Association, for the district in which the dispute arises, and then by three members of such arbitration board. Decision of the arbitrators shall be final and binding; the cost of arbitration to be paid by the loser."

In submitting the contract, W. L. Juhring, chairman of the contract committee, wrote.

"We desire to impress upon the wholesale grocery trade, as well as allied trades, that this contract form has been drawn most carefully, after due deliberation and extensive consultation with representative wholesale grocers in all sections of the country."

"We believe that this contract will be so generally accepted, as fair to both buyer and seller, that it will furnish an acceptable and practicable basis for negotiation between the great majority of buyers and sellers for the canning pack."

"The contract committee has made an exhaustive survey for suggestions and has studied a large number of forms. The sound and the fair ideas have been adopted and consolidated into this simple, straightforward suggestion. Individual wholesale grocers can use this form or reject it as it suits their best judgment. It is only intended as a possible helpful suggestion. It is issued without any booming of guns, because this office believes that all results must, ultimately, stand the test of practical experience. This contract, we believe, will do that."

"We strongly urge wholesale grocers to study this form carefully in all its details. Remember that it is not the creation of a moment's thought nor of one brain."

"The national association regrets that certain developments made it impracticable to issue a contract form endorsed by the national association of the canners and the national association of the grocers."

### To Refine Vegetable Oils in Brewery

The Pocono Food Company has purchased an idle brewery at Stroudsburg, Pa., and will convert it to a plant for the refining of vegetable oils. It is expected that the refinery will be in operation in about four months.

### Candy Makers to Consider Co-operative Advertising

At a meeting of the National Confectioners' Association, which will be held at Atlantic City, N. J., May 23 to 30, plans for a national candy advertising campaign will be outlined. The plans for this co-operative campaign, intended to increase the consumption of candy, call for an appropriation of \$50,000.

### May Advertise New Trademarked Condensed Milk

Advertising of branded condensed milk and evaporated milk is contemplated by the Rogers Milk Products Company, Inc., New York, which has been recently formed to take over the Rogers Milk Corporation.

The Rogers Milk Corporation with plants at Pulaski and Boonville, N. Y., has for some time manufactured sweetened and unsweetened milk and evaporated milk which has been sold to wholesalers who sold the products largely under their own private labels.

The officers of the Rogers Milk Products Company, Inc., the new company, are: Charles Rogers, president; A. C. Bragaw, vice-president, and F. C. Jerome, secretary-treasurer.

George S. Applegarth is advertising manager.

### Tri-State Wholesalers Elect R. L. Montgomery President

Among a number of resolutions adopted by the Pennsylvania, New Jersey & Delaware Wholesale Grocers Association at its annual convention, held in Atlantic City, was one favoring prepayment of freight upon goods sold upon a delivered basis. The association declared against larger trade discounts on manufactured products, approved plans

adopted by manufacturers and distributors to protect jobbers' stocks on a falling market, and affirmed emphatic approval of the discount-for-cash system.

In further resolutions submitted by a committee, of which Hugh D. Trout of Trenton was chairman, the association indorsed efforts of the Near East relief to place "silent salesmen" coin collecting posters in every grocery store, reaffirmed approval of the metric system of weights and measures, strongly opposed a gross sales or turnover tax, asked for the restoration of weekly settlements for freight bills, and requested the American Specialty Manufacturers' Association to instruct members that all sales made by their representatives shall bear upon the sales slip the price at which the article is sold.

Robert L. Montgomery, of Philadelphia, was elected president. The other officers named are: William A. Hannigan, of J. D. Sisler Company, Wilmington, first vice president; Edward J. Morris, Reading Wholesale Grocery Co., second vice president; Henry G. Blackwell, Trenton, third vice president; Charles Y. Fox, of Githens, Rexsamer & Company, Philadelphia, treasurer, and Alvin M. Graves, Philadelphia, secretary-general-manager.

In his speech, advocating that all manufacturers sell through jobbers, President Montgomery said:

"Five hundred million dollars spent for specialty sales work by the food industry of the United States in 1920 is a statement made by one of the large cereal mills. This is equivalent to 25 per cent. of the first Liberty Loan. This tax is too heavy for the manufacturers of food products to expect the consuming public to pay. It is not sound business and will eventually fall of its own weight. Something is dead wrong. Let me make a prediction. If the manufacturers of the food products will make it possible for the wholesale grocers—and when I say 'wholesale grocer' I mean as defined by the constitution and by-laws of this association—to make a legitimate profit on his product, thus securing the co-operation instead of the indifference of this very important factor in the distribution, the cost for specialty work could be cut in half and still secure as large a volume."

"If the retail grocers come to realize that a \$500,000,000 tax is imposed on the products he buys from the specialty salesman and that the chain stores do not pay this tax—they using the argument that specialty men are not necessary in their case—the specialty man will be about as welcome as the man with smallpox."

"Direct selling is the common task of the day and yet the manufacturer in no instance has been able to eliminate one item of expense. He has simply constituted himself as both manufacturers and jobber, and neither the consuming public nor retailer has been benefited, but rather the reverse. Direct selling is about as logical as to attempt to supply each house with water through a separate water pipe run from the source of supply."

### Oklahoma Wholesale Grocers Did \$100,000,000 in 1920

It was brought out at the meeting of the Oklahoma Wholesale Grocers' Association that the annual sales of the wholesale grocery houses in Oklahoma, for the year 1920, amounted to a little more than \$100,000,000. Last year these houses handled 1,500,000 bags of sugar. Figures compiled by the Bureau of Business Research of Harvard University prove that the wholesale grocers of Oklahoma last year earned approximately 2 per cent. clear, it was said.

Thirty-five out of the eighty-seven wholesale grocers in Oklahoma were present. A general demand for lower freight rates was voiced.



# Food Industries Show Large Expansion

## Chocolate and Cane and Beet Sugar Production Greatly Increase, According to Census Reports

A tremendous growth in the chocolate industry is indicated by the preliminary report just issued by the Census Bureau, giving the results of the 1919 census. While the number of establishments devoted to the production of chocolate and cocoa products only increased from 36 in 1914 to 48 in 1919, the value of products increased from \$35,712,810 to \$129,258,296, an increase of 287.1 per cent.

In 1919, fourteen establishments were located in New York, ten in Pennsylvania, eight in New Jersey, six in Massachusetts, four in California, two in Ohio, and one each in Wisconsin, Illinois, Vermont and Connecticut.

The results of the 1919 census are summarized in the following statement, which is merely preliminary and subject to correction should changes be found necessary.

	1919
Number of establishments...	48
Value of products .....	\$129,258,296
Chocolate cakes sweetened and unsweetened .....	51,186,769
Chocolate liquor and coating .....	35,841,651
Chocolate (including milk chocolate) .....	11,894,551
Cocoa (including powdered cocoa in cans) .....	23,764,691
Cocoa butter .....	13,736,683
Other chocolate and cocoa products .....	277,907
All other products .....	2,556,044

### Growth in Beet Sugar Production

The manufacture of beet sugar and products also shows a tremendous growth for the five-year period elapsing between censuses, an increase of twenty-five plants being reported and an increase in the value of products of more than eighty-six and one-half million dollars, or 138.2 per cent. A peculiar feature of the report is that the quantity of beet sugar produced in 1919 was sixty million pounds less than in 1914, but the value of the product in the latter year was nearly eighty million dollars greater.

Of the 85 establishments in operation in 1919, there were 16 establishments each in Michigan and Utah; 14 in Colorado; 10 in California; 8 in Idaho; 5 in Ohio; 4 each in Nebraska and Wisconsin, and one each in Illinois, Indiana, Iowa, Kansas, Minnesota, Montana, Washington and Wyoming.

Following is the preliminary report issued by the bureau, giving comparative figures for the years 1914 and 1919:

	1919	1914
Number of establishments .....	85	60
Total value of products.....	\$149,155,892	\$62,605,210
Sugar:		
Pounds .....	1,426,891,315	1,486,947,817
Value .....	\$138,099,693	\$58,590,466
Granulated—		
Pounds .....	1,421,914,425	1,478,466,899
Value .....	\$137,852,387	\$58,351,324
Raw—		
Pounds .....	4,976,890	8,480,918
Value .....	\$247,306	\$239,142
Molasses:		
Gallons .....	18,841,429	26,461,291
Value .....	\$2,364,563	\$1,536,192
Pulp:		
Tons .....	2,082,531	(1)
Value .....	\$5,798,412	\$2,094,863
Dried—		
Tons .....	976,501	(1)
Value .....	\$4,829,568	\$1,510,759
Moist—		
Tons .....	1,106,030	(1)
Value .....	\$968,844	\$584,104
All other products, value.....	\$2,893,224	\$383,689

(1) Not reported in 1914.

### Cane Sugar Also Shows Growth

An increase of twenty-one establishments and thirty-six million dollars in

the value of the product was recorded for the cane sugar industry. As in the beet-sugar industry, most of the increase was in the value of the sugar produced, the quantity in 1919 being nearly seventy-nine million pounds less than five years previous.

Of the 202 establishments operating in 1919, 189 of them were located in Louisiana, six in South Carolina, three in Florida, two in Georgia, and one each in Mississippi and Texas. Details of production in the two census years are given in the following table:

	Production—	
	1919	1914
	202	181
Total for the industry .....	\$57,741,320	\$21,635,373
Number of establishments .....		
Sugar—		
Pounds .....	450,955,838	529,601,993
Value .....	\$46,659,085	\$18,947,683
Refined—		
Pounds .....	71,627,346	107,187,416
Value .....	\$9,547,378	\$4,228,860
Clarified—		
Pounds .....	258,293,878	182,149,649
Value .....	\$26,563,156	\$6,742,266
Raw—		
Pounds .....	113,154,404	229,646,354
Value .....	\$9,898,958	\$7,615,147
Brown—		
Pounds .....	7,880,210	10,618,574
Value .....	\$649,593	\$361,410
Molasses:		
Gallons .....	20,058,248	20,675,260
Value .....	\$4,868,740	\$2,021,517
Sirup:		
Gallons .....	6,739,978	2,420,633
Value .....	\$4,189,199	\$609,696
All other products, value.....	\$2,024,296	\$56,477

### Imports and Exports of Peanuts During Month of March

The United States imported 4,748,136 pounds of peanuts valued at \$199,411 during the month of March, compared with 2,374,821 pounds, valued at \$127,201, during February. During the same month 1,570,186 pounds of domestic peanuts valued at \$106,879 were exported, compared with 1,429,786 pounds valued at \$100,658 during February. Canada furnished the most important market for American peanuts, taking 1,394,535 pounds during March.

Most of the peanuts imported into this country during March were shelled. Of the total importation 4,386,220 pounds were shelled and 361,916 pounds were not shelled. Japan furnished 3,885,100 pounds of the shelled and 215,652 pounds

## Secretary Hoover Suggests Food Marketing Board

Secretary of Commerce Hoover has suggested the creation of a national food marketing board under the chairmanship of the Secretary of Agriculture, with the existing Bureau of Markets as its executive arm.

In a letter to Senator Capper of Kansas the Secretary outlined as one of the functions of such a board the formation of regulations or voluntary agreements with the produce exchanges in such manner as not to undermine the very necessary process of hedging, but at the same time to control that type of speculation which is able through powerful drives on the market to crush the weak holder of grain and force him upon the market.

This function, the Secretary said,

could be performed better through such a board than by direct fixed legislation.

Other services to be performed by the proposed board, Secretary Hoover said, would be the determination and publication of facts as to distribution and prices of vegetables and fruit and the development of warehouse practices with respect to grain and other less perishable agriculture produce.

### Packing Merger has Assets of \$10,000,000

Ten million dollar assets result from the combination of two companies, the Van Camp Packing Company and the Louisville Food Products Company, the merger of the two being practically complete.

The merged company will operate under the name of the Van Camp Packing Company, with main offices in Indianapolis. W. G. Irwin, of Columbus, president of the Van Camp company, will presumably head the new organization. The Van Camp Packing Company, besides its main factory, has branch establishments at Martinsville, Plainfield, Crawfordsville and Elwood, Ind.; Mattoon, Ill., and Watertown, Algoma, Sawyer, Wis.; Adrian, Mich., and Bryan, O. The Louisville Food Products Company has four factories in that city, its holdings covering about twenty-seven acres.

### \$10,000,000 Libby, McNeil & Libby Bond Issue

A banking syndicate composed of the Harris Trust & Savings Bank of Chicago, Dillon, Read & Company, of New York, and the Illinois Trust Company and Continental & Commercial Trust & Savings Bank of Chicago, is offering \$10,000,000 Libby, McNeil & Libby, ten year, 7 per cent. mortgage bonds. The mortgage is against property having a value of approximately \$24,000,000. Net tangible assets of the company are stated as \$70,000,000 and net current assets as \$18,000,000. The bonds are offered at 95¼ to yield 7½ per cent.



**Amy Smith says:**

"I find Moxley's Margarine gives excellent results in cooking, having tested it on corn bread, biscuits and cakes."

"I have also served it for table use and think only an expert could detect it from a good grade of butter."

Amy Smith is the head of the Cookery Department of the great Woman's magazine, "Today's Housewife."

Dixie Margarine is pasteurized into purity in every ingredient.

Chartered by  
**Wm. J. Moxley Inc.**  
CHICAGO

*"America's Most Famous Dessert"***JELL-O is Always Ready**

"One of the prime merits of Jell-O is that it is always ready. With a package of Jell-O on the emergency shelf and some boiling water, there is no trouble in preparing a dessert which is sure to come out right. By the addition of fruit or cream an endless variety may be produced and the question 'What shall we have for dessert?' is nearer solution than it possibly can be in a household where Jell-O has no place."

Christine Terhune Herrick.

**2 Packages for 25 cents**

**The Genesee Pure Food Co.**  
Bridgeburg, Ont. Le Roy, N.Y.

**Don't Spend Elevator Money To Do Lowerator Work**

It takes power to lift incoming goods. Outgoing goods will handle themselves by gravity. Elevator upkeep and operator's wages are wasted in lowering packages.

**DISCHARGE YOUR ELEVATOR MAN**

Lowerator saves wages and upkeep. Takes goods to shipping platform from any floor. Goods unload themselves. No banging, racking or breakage as in spiral chutes.

**NO OPERATOR NO DELAY  
NO POWER**

Speeds up your shipping room—acts as a pacemaker—no waiting on floors for elevator—does the work of four elevators at a fraction of the expense. Easily installed in your present building. It is used in many food manufacturing plants and wholesale grocery houses.

Send for full information and list of nationally known users—many in your line.

**LOWERATOR COMPANY**  
116 West Thirty-ninth Street, N. Y. C.

Also Manufacturers of  
Tray Elevators

Let your Goods  
bring themselves  
Down



**LOWERATOR**  
*a machine—NOT A CHUTE*



## Swiss Chocolate Industry in Serious Condition

The most serious condition since its establishment is at present facing the Swiss chocolate industry. The foreign market for Swiss chocolate has become very unfavorable, and in the opinion of the leading manufacturers, there is little indication of any substantial improvement in the near future. The domestic market is at present glutted, not only with the finished product, but also with the raw materials—cocoa beans and condensed milk.

The reason for the general demoralization said to exist in that industry in Switzerland is that the central and eastern European countries have almost entirely stopped buying Swiss chocolate. The former Russian and Austro-Hungarian empires, the Balkan states, and the Levant were all large customers before and during the war, but the present poor economic and political conditions, coupled with unfavorable exchange, practically eliminated these former important markets.

Germany, which was still an important market for high-grade Swiss chocolate, especially milk chocolate, recently placed an embargo upon the importation of this product. The Swiss manufacturers are retaliating to some extent by refusing to purchase cocoa beans from German brokers, as they have been in the custom of doing, but as the Swiss market is already greatly overstocked with this raw product, such reciprocal action is not very effective.

Some Swiss producers have attempted to overcome their difficulties by establishing branch factories in France, and some are seeking other solutions of the problem. In various European countries numerous chocolate factories have been organized during the past few years and they are profiting by the unfavorable situation in the export trade of the Swiss industry. Their future appears profitable, especially for those employing Swiss experts in their management. During the past few months a number of such factories have been established in England and in France—six in London alone, and one each in Manchester, Preston and Beccles. In France the newly organized Chocolaterie et Confitiserie Fins du Rhone in Lyon, and its branch factory, Cailler in Pontarlier, may be specially mentioned. The Fabrique de Chocolats Fins de Nancy has also recently decided to increase its capital. A new factory for the manufacture of chocolate and cocoa, provided with the most modern machines and the latest equipment, is to be established in the near future in upper Italy. The board of directors of this concern, which plans to produce best-quality chocolate, intend to employ Swiss experts in both technical and mercantile departments.

When milk became scarce in Switzerland during the latter part of the war Swiss chocolate factories were prohibited from using fresh milk and were forced temporarily to use American condensed milk. Chocolate manufacturers in France and in the Scandinavian countries, Denmark, Sweden and Norway, are now attempting to take advantage of this fact. While the milk scarcity still exists in Switzerland, Denmark is exerting itself to develop a large export of milk. Danish condensed milk has found a heavy demand in both Germany and England, and recently new condensed milk and milk-powder factories have been established in various cities in Denmark.

### Work on New Del Norte Fish Cannery to Begin

Work will soon be started on the plant of the Del Norte Packing Corporation, which recently entered the fish canning business at Crescent Bay City, Cal. The corporation will catch, pack and market all varieties of fish which abound in its

fishing area, the coast waters extending from Coos Bay, Ore., on the north, to Eureka, Cal., on the south, with Crescent City centrally located. The plant will consist of three units: a salmon cannery, for the canning of salmon and all products in round cans and vacuum pack; plant for the canning of all products in oval cans, principally sardines, and a cold storage plant for the freezing of all fish and mild curing of salmon; a whaling station capable of handling two whales each twenty-four hours, and also convert all surplus fish and refuse into oil, fish meal and fertilizer.

## Meat Packers' Convention to Be Held in August

The annual convention of the Institute of American Meat Packers will be held in Chicago on August 8, 9 and 10, the dates having been selected because of the Pageant of Progress which is to be held there at that time. The convention and its auxiliary meetings will be held at the new Drake Hotel, which will also be the convention headquarters.

Committees of the Institute and the American Meat Packers Trade and Supply Association have been announced and are working on the exhibit features.

Thomas E. Wilson, president Institute of American Meat Packers, is chairman of the special convention committee; A. D. White, Swift & Company, Chicago, heads the local arrangement committee; E. S. Waterbury, Morris & Company, is chairman of the entertainment committee, and W. W. Woods, Institute of American Meat Packers, heads the publicity committee.

## Milk Situation Approaches Pre-War Status

For the first time since the beginning of the World War there is developing in this country a surplus of milk, according to reports recently received by the United States Department of Agriculture. Specialists of the department state that this condition probably will be only temporary during the "flush" of the season and that it is most apparent in well developed dairy districts. It may continue during the summer months, but is expected to adjust itself by fall when demand will overtake the surplus of supply. The situation is largely due to the falling off in the demand for milk in the manufacture of condensed products, milk powders, casein and similar products, for which there was a large export outlet. To utilize the surplus of milk the specialists urge its increased use both as human food and, in producing districts, as feed for live stock. The value of skim milk for feeding purposes on farms is now approximately equivalent to its value for manufacturing purposes, they say.

### Estimate 1920-1921 German Sugar Production at 990,000 Tons

An estimate by a representative of the Department of Commerce, places the German sugar production for 1920-1921 at a total of 970,000 tons. The retail price of sugar during the current production year has averaged 8 paper marks per kilo (2.2 pounds), and the average price for imported sugar has been about 12 paper marks per kilo. With these prices as a basis for calculation, the total expenditure in paper marks by the consumers for the production year 1920-21 will be as follows: Sugar of domestic production, 7,760,000,000 marks; imported sugar, 240,000,000 marks; total, 8,000,000,000 marks.

### Exportation of Olive Oil from Spain Authorized

According to a cablegram from Commercial Attache C. H. Cunningham, Madrid, under date of April 23, 1921, the Spanish Government has authorized the exportation of 20,000 tons of olive oil.

## Canadian Court Decision Defining a Contract

An interesting case was recently brought up before a Canadian court, which might establish a precedent in certain business dealings carried on by telegraph or long-distance telephone. The main issue of this suit, as brought out in trial, was "what constitutes a contract."

An American firm was plaintiff in a suit against a firm in Montreal for breach of contract. The contention of the plaintiff was that on December 27, 1918, the defendant made certain quotations on a shipment of tapioca; two days later the plaintiff wired the Canadian firm accepting the price and asking the price for shipment of "100" or more. The next day the defendant wired the American firm saying that it could not ship "100" but would ship 25 tons of seed and 25 tons of pearl, at a price which was slightly higher than the previous quotations. In the meantime the plaintiff had written a letter to the Canadian firm confirming the previous wire and, as it contended, making the contract binding.

There was some discussion as to whether the figure "100" appearing in the telegram referred to bags or to tons. It seems from the evidence given that the custom has been to quote tapioca on a basis of bag lots. The American firm, however, claimed that it always bought on a basis of tons, since its distribution is on a large scale. A point, however, was brought out by the counsel for the plaintiff that in the answer to the telegraph order the defendant said, "Can not ship 100 but will ship 25 tons of each," referring to seed and pearl tapioca. In the final issue, however, this did not feature, for in the court's finding this point of tons or bags was not mentioned.

After some deliberation the court ruled that by the telegrams which were exchanged between the two companies the contract was not consummated and no definite or legal obligations were laid upon either party; as a result, the action of the plaintiff was dismissed. From this finding it appears that when telegrams such as featured in this case are exchanged between parties doing business no contract is entered into; that letters in writing and signed by the contracting parties are necessary to make the contract binding.

## Food Exports to Germany Make High Record

According to a statement published by the National City Bank of New York, exports from the United States to Germany in the fiscal year which ends with June will exceed those of any year prior to the war.

Of these exports, adds the bank's statement, food and manufacturing material are the principal items. Wheat alone was, in the eight month period ending with February, \$39,000,000 value, and flour, \$12,000,000. Bacon amounted to \$14,000,000; lard, \$32,000,000; condensed milk, \$5,000,000; oleo oil and cottonseed oil, about \$2,000,000. In fact, Germany's purchases of our lard were in the period in question more than those of any other country except Great Britain.

### California Packing Earns \$9.01 on Common

The California Packing Corporation's annual report for the year ended February 28, 1921, shows profit after charges and taxes of \$4,253,015, equivalent to \$9.01 a share earned on the outstanding 471,708 shares of common stock of no par value. Preferred stock has all been converted into common shares. In the preceding year total profits were \$7,242,402, equivalent after preferred dividends to \$19.98 a share on the 338,917 shares of common stock then outstanding.





## 1921 Will Make Way for Thinkers

Fighters will score heavily in 1921—but the big prizes of the year are destined for men who know and understand.

Preparedness wins advertising and business battles. It is a product of experience with the addition of forethought and the absence of fearthought.

An important preparation period for business men in this year of 1921 is the forthcoming

**Seventeenth Annual Convention Associated Advertising Clubs of the World—Atlanta, June 12-16**

There, problems of new distribution will be considered seriously and helpfully by hundreds and thousands of experience-taught minds.

In effect this meeting will be the Great Business Class Room of the current year, dealing with advertising—the powerful motivating force of modern business.

Alert business men will travel a long way for this short course in practical marketing. Be one of them. Make reservations now for your June trip to Georgia.

**Exhibits of Domestic and Foreign Advertising**, demonstrating the use of practically all recognized mediums, and arranged solely with a view to helping the convention delegate, will be a special feature which, alone, will make the trip worth while.

In June Atlanta is at its best. High on a ridge between the Gulf and the Atlantic, fanned by cooling breezes and clad in gay summer attire, it is, as proved by United States Weather Bureau reports, a delightful place in June.

For complete information as to railroad rates, hotel reservations, etc., please address the

### Associated Advertising Clubs

110 West 40th Street

New York City

*Atlanta is famed for its hospitality*

## There is

CLEANLINESS, HEALTH INSURANCE,  
ECONOMY AND CONVENIENCE IN

## OUR PET

BRAND

## Evaporated Milk

*The Standard of the World*

Wins and Holds Trade on account of its  
Superior Quality

PREPARED BY

**Helvetia Milk Condensing Co.**  
HIGHLAND, ILLINOIS

ORIGINATORS OF EVAPORATED MILK

Statement of the Ownership, Management, Circulation, etc., required by the Act of Congress of August 24, 1912, of The American Food Journal, published monthly at Rockville Centre, N. Y., for April 1, 1921.

State of New Jersey,  
County of Essex, ss.:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared J. T. Emery, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the American Food Journal, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, The American Food Journal, Inc., 25 East 26th St., New York City.

Editor, Clarence E. Wright.  
Managing Editor, None.

Business Managers, J. T. Emery.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.)

J. T. Emery, Glen Ridge, New Jersey.

Karl M. Mann, Montclair, New Jersey.

Clarence E. Wright, New York City.

Louis F. Dodd, Montclair, New Jersey.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

J. T. EMERY,  
Business Manager.

Sworn to and subscribed before me this 28th day of March, 1921.  
(Seal) JOHN J. F. CAVANAGH,

Notary Public of N. J.

(My commission expires Oct. 27, 1925.)

## WHITER—SWEETER—LIGHTER BREAD AND CAKE

The first essential of success in home baking is to employ a leavener that is pure, thorough and dependable—one that raises evenly, and gives the bread and cake the right texture, and appetizing appearance—and makes them easily digested. The purity, uniform strength and perfect keeping qualities of

## RUMFORD

THE WHOLESOME

## BAKING POWDER

insures whiter, sweeter and lighter cake and bread—it raises the baking just right, and adds to the nutritive value, as it restores phosphatic elements equivalent to those which fine wheat flour loses in the process of milling.

Every Housewife, Dietitian, Domestic Science Teacher and Lecturer should have a copy of "Rumford Dainties and Household Helps." We will be pleased to send it FREE upon request.

**RUMFORD CHEMICAL WORKS**  
Providence, R. I.



## Record Sugar Crop Made in U. S. in 1920

This country's greatest sugar crop was produced in 1920, according to final returns from producers of beet and cane sugar made to the Bureau of Crop Estimates, United States Department of Agriculture. The total is 1,266,148 tons and this exceeds the previous record crop of 1916 by 12 per cent. and the low production of 1919, a year of exceptionally unfavorable weather, by 49 per cent. Beet and cane sugar combined first exceeded a production of 1,000,000 tons in 1913, and, during the last eight years, the production has been below that quantity only in 1914 and 1919.

Beet sugar has steadily advanced in production from the days when it was an experimental crop, with now and then a recession on account of weather. It first passed the mark of 1,000,000 tons in 1920, with 1,090,021 tons, or 86 per cent. of the sum of beet and cane sugar for that year. On the contrary, cane sugar has declined in production for about 15 years. The product of 1920 was 176,127 tons, a low, but not the lowest quantity of the period of decline. About 28 per cent. of the 1920 cane acreage was devoted to producing cane for seed purposes.

Cane sugar production is confined almost entirely to Louisiana, but beet sugar production is widely distributed from Michigan and Ohio to California along a strip of country that has been called the sugar-beet belt.

### Recent Patents

The following patents of interest to readers of THE AMERICAN FOOD JOURNAL recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Continental Trust Building, Washington, D. C., at the rate of 20 cents each. State number of patent and name of inventor when ordering.

1,371,450. Candy and other food products and the process of making same. William F. Speck, Chicago, Ill.

1,371,658. Machine for treating fish. Maurice J. Abbott, New York, N. Y., assignor to American Can Co.

1,372,112. Method of preparing evaporated vegetables. Ralph S. Wittenberg, The Dalles, Ore., assignor to Pacific Evaporator Co., Portland, Ore.

1,372,293. Coconut-shell-cracking machine. Herbert C. Jones, Tottenville, N. Y., assignor to Franklin Baker Co., Philadelphia, Pa.

1,372,527. Process of producing powdered meat. John C. MacLachlan, St. Paul, Minn., assignor to Standard Food Products Co., same place.

1,372,614. Culinary product. Carleton Ellis, Montclair, N. J.

1,372,615. Edible-oil material and process of producing same. Carleton Ellis, Montclair, N. J.

1,372,616. Esterified edible product. Carleton Ellis, Montclair, N. J.

1,372,891. Method of extracting juices from root fruits. Oscar Mengelbier, Berlin, Germany, assignor to Chemical Foundation, a corporation of Delaware.

1,373,113. Fruit-dripping machine. Walter W. Beardsley, Salem, Ore.

1,374,185. Whole wheat food product. Charles F. Brickmeyer, Bennett, Iowa.

1,374,340. Apparatus for blanching or cooking vegetables. Edward J. Vaudreuil, Eau Claire, Wis.

1,374,341. Process of blanching or cooking vegetables. Edward J. Vaudreuil, Eau Claire, Wis.

1,374,419. Wafer-baking apparatus. Martin H. Bergen, New York, N. Y., assignor to National Biscuit Co., same place.

1,374,555. Dehydrated milk and process of producing same. Samuel M. Dick, Minneapolis, Minn., assignor to International Dry Milk Co., same place.

1,374,765. Mixer for dough and like plastic substances. Joseph W. Owen, Plymouth, England.

1,374,879. Concentrated cocoanut milk and process of making same. William S. Cookson, Taiping, Perak, Straits Settlements.

1,374,880. Cocoanut food product. William S. Cookson, Taiping, Perak, Straits Settlements.

1,373,398. Cutting device for fruit disintegrating machines. Leland A. Babcock, Chicago, Ill., assignor to Sprague Canning Machinery Co., same place.

1,373,651. Food preparation and process of making. Harry S. Cullen, Wellington, New Zealand.

1,373,791. Dough forming and cutting machine. Charles O. Bode, New York, N. Y.

1,373,796. Dough-cutting machine. Paul Cardone, Giacomo Fumagalli, and Carmine Surico, New York, N. Y.

1,373,811. Dough divider. George Happ, Jr., Port Jervis, N. Y.

1,373,933. Citrus-juice powder. Shirley L. Ames, New York, N. Y.

1,374,138. Composition of dried modified cultured milk powder to be used in cooking and baking human foods. Arthur R. Coulson, San Quentin, Cal.

1,374,160. Composition of sugar and method of preparing the same. Nathaniel C. Fowler, Jr., Somerville, Mass.

## Must Discontinue Offers of Assorted Groceries

The Big Four Grocery Company, Chicago, by recent order of the Federal Trade Commission, must refrain from certain competitive methods in advertising and selling combination or assorted lots of groceries.

It was found that combination lots, as advertised by this company, consisted of some staple articles whose quality and price were well known to the public, but that the greater part of the lot consisted of articles whose quality and price were not known to the public.

Sugar was advertised at 4½ cents per pound; flour at \$7.98 a barrel; soap, 2 cents a cake, and Quaker Oats at 4 cents per package, to lead the public to believe that all the groceries in a given lot were proportionately low. In order to get the low priced articles, the purchaser was required to buy the entire lot. The trial developed that the articles whose quality and price were not known were listed sufficiently high to give a satisfactory profit on the whole lot, the little known articles being priced high to offset the low priced well known articles.

The order requires the Big Four Grocery Company to discontinue any false and misleading advertising concerning its combination lots of groceries, and to discontinue any false advertising concerning the prices at which its competitors sell.

## Welch Grape Juice Company Tries "Tasting" Campaign

As an aid in getting rid of its stock, and also as part of its advertising campaign, the Welch Grape Juice Company is asking grocers to give customers a taste of Grapelade, "on the house."

The campaign is being conducted as a result of a successful experiment made along those lines last year. The paraphernalia of the campaign consists of a demonstration outfit and two displays, one for the window and another for the tasting table in the store. The demonstration is self-operating—that it, is a help-yourself affair. The retailer sets a table prominently in his place of business. On it are spread invitingly a few paper doilies, four glasses of the product being demonstrated, a pile or two of booklets, a number of spoons, a glass bowl of Grapelade, and in the back,

dominating the exhibit, is a sign reading:

"Help yourself to a Taste of Welch's Grapelade."

The window display ties up with the demonstration inside.

A letter telling about the demonstration has been sent to every grocer and delicatessen in the country, rated \$1,000 or over, totalling 110,000. The letter, which contains an illustration of both the window and the tasting display, reads:

"Let Welch help shoulder your merchandising load by sending you a demonstration outfit and two handsome displays for table and window. All you need are a table, a dish, a jar of Grapelade, some crackers, if you like—and enough stock to fill the sales you'll make.

"Take a fifteen-ounce jar out of stock. We'll send you forty cents for it, if you'll return the slip that will be included with the display we're expecting you to request on the enclosed card.

"Were you in on the Grapelade Tasting Demonstration held by retailers in every state last spring? If so, maybe you wrote us one of the many letters that told us what a success it was.

"This year you'll find many more folks interested in tasting 'the pure grape spread.' And that's all that's necessary—Grapelade sells on taste.

"The big thing now is to keep stocks moving by concentrating on well-known lines, isn't it? All right; folks have the money to buy the things they really want and, now that they can get 'em again, they're looking for their favorite brands—like Welch's.

"What an opportunity for you to tickle your customers' palates with Grapelade. Home-made preserves are low on the family pantry shelf; your customers will be delighted to stock up with this pure-fruit-and-sugar spread. The whole grapes, juice and all—all but skins, seeds and acid crystals—go into Grapelade.

"The sooner we get your order to go ahead, the sooner you're going to make more money out of Grapelade."

## United States Imports Large Quantity of Dried Eggs from China

Nearly four per cent. of our imports from China in 1920 were dried and frozen eggs, used largely in bakeries. Although the heaviest import of Chinese eggs into the United States begins in August and continues until the month of February, the shipments of this product are fairly regular throughout the year.

Of a total of 29,022,577 pounds of dried and frozen eggs imported from all countries, 25,646,791 were received from China. As China is in the same latitude as the United States, the laying season corresponds very closely with our own, and consequently the receipts at the American egg freezing plants which have been erected at Shanghai are heaviest in the spring. Ample provision for cold storage and other facilities at Shanghai, and refrigerator ships for the trans-Pacific run, must, therefore, be provided in order to keep the plants working to capacity all the year round and the supply of Chinese frozen and dried eggs regular for the American market. A large amount of American capital has been invested in these plants in China.

### William W. Wilson Dead

William W. Wilson, head of his own wholesale canned goods house in Philadelphia, died of pneumonia at the age of sixty-eight, while on a recent visit to Pittsburgh. Mr. Wilson who was born in Pittsburgh, was for twenty years with his father in the wholesale grocery business in that city, when he moved to Philadelphia and established a canned goods business.



# TIN AND FIBRE CONTAINERS

FOR

Foods :: Drugs :: Oils

Infinite Variety  
Large Capacities  
Prompt Deliveries



**AMERICAN CAN COMPANY**

CHICAGO

NEW YORK

SAN FRANCISCO

With Offices In All Large Cities

**NUCOA**



*Butters Bread  
Stays Sweet*

The sun never sets on Nucoa sales. It is sold from San Francisco to Antwerp. It will encircle the globe. It must. It repeats.

**The Nucoa Butter  
Company**

New York Chicago San Francisco



## Illinois Vinegar Mfg. Co.

Sales Department  
327 South LaSalle Street,  
Chicago, Ill.

Manufacturers of High Grade  
**DISTILLED AND CORN  
SUGAR VINEGARS**

## THE COLUMBUS LABORATORIES

31 N. State Street, Chicago, Ill.

Departments:—Food, Commercial, Medical, Milling and Baking. Expert Staff of Consultants. Court and Medico-Legal Work.

## PATENTS

I render expert legal assistance in obtaining patents to protect inventions. The value of a patent depends largely upon skillful preparation and prosecution of the application. Information about obtaining patents sent on request.

R. E. BURNHAM, Patent and Trade Mark Lawyer  
Continental Trust Building - - - Washington, D. C.



# E. PRITCHARD

Packer and Manufacturer  
of the Finest

## "EDDYS"

BRAND

Canned Food, Jellies, Preserves  
Plum Pudding, Sauces, Table Delicacies

and

### PRIDE OF THE FARM

### TOMATO CATSUP

Bridgeton, New Jersey

and

331 Spring Street, New York, N. Y.



## PRICE'S VANILLA

Price's is the pure juice of the finest vanilla beans—aged in wood to give a rich, mellow flavor. No substitute flavor nor artificial coloring in it!

PRICE FLAVORING EXTRACT CO.

In Business 66 Years

CHICAGO

U. S. A.

Something New  
Samples Gratis

## GRANULATED BORIC ACID

Will dissolve more readily than  
any form hitherto introduced.

When ordering, Specify

**20-Mule Team Granulated Boric Acid**

U. S. P.

PACIFIC COAST BORAX CO., DEPT. B.

CHICAGO. 100 William St., New York City. SAN FRANCISCO

## NOTICE to Subscribers

The publishers of The American Food Journal will pay 25c. each for the following back copies of the magazine:

December, 1918.

January, May and July, 1919.

March, April, May, August and December, 1920.

THE AMERICAN FOOD JOURNAL

25 East 26th Street

New York

## Ammonium Phosphate

## Phosphoric Acid

## Baking Powder Materials

Highest Quality  
For Food Purposes

## Victor Chemical Works

New York

CHICAGO

St. Louis



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## ***Manufacturers:***

PLEASE mail to us, marked for the attention "Catalogue Editor," duplicate copies of your current catalogues, circulars, price lists, house organs and all sales literature, particularly that recently issued.

As a form of service and without charge to you, The American Food Journal will place this material at the disposal of our readers in a way that will work to your advantage.

The closer you cooperate with us by placing us on your mailing list, the more we can do for your benefit.

Tell your stenographer to attend to this, if you please.

Yours for cooperation,

# The American Food Journal

May 15, 1921.



# The "Atlas" Label

Protects You

And has Stood for Highest  
Quality and Uniformity  
for Over Half a Century

"Atlas" Certified Food Colors

"Atlas" Vegetable Colors

"Atlas" Carmine No. 40

"Atlas" Genuine Fruit Extracts

"Atlas" Pure Vanilla Extracts  
Emulsions, Etc.

Manufactured at Our Works in Brooklyn, N. Y.

Correspondence Solicited, Prices Quoted  
and Samples Submitted

## H. Kohnstamm & Co.

ESTABLISHED 1851

New York

Chicago

## *For Sale*

\*-----\*

One cold water can cooling conveyor and  
elevator. Can supply blue prints.

\*-----\*

Also one Karl Kiefer Visco Filling Machine.  
All new machines.

\*-----\*

### Alwood & Steele

1405 West 57th Street  
Chicago, Ill.



## Self-Sealing Wax Paper

—made right for your purpose and  
product. Known from Coast to  
Coast.

All such prepared foods — plain  
wrapped or packaged — as depend  
upon air-tight covering for keeping  
qualities will open up fresh and  
crisp if hermetically sealed in our  
SELF-SEALING WAXED PAPER.

"The proof of the pudding is in the  
eating." Ask some of our custom-  
ers. We'll give you the names,  
also samples and prices on request.

### WAXED AND VEGETABLE PARCHMENT PAPERS

Kalamazoo Vegetable Parchment Co.  
KALAMAZOO, MICH.



# The American Food Journal

The National Magazine of the Food Trades



UNIVERSITY OF ILLINOIS LIBRARY

JUN 25 1921

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By Miss Lulu Graves

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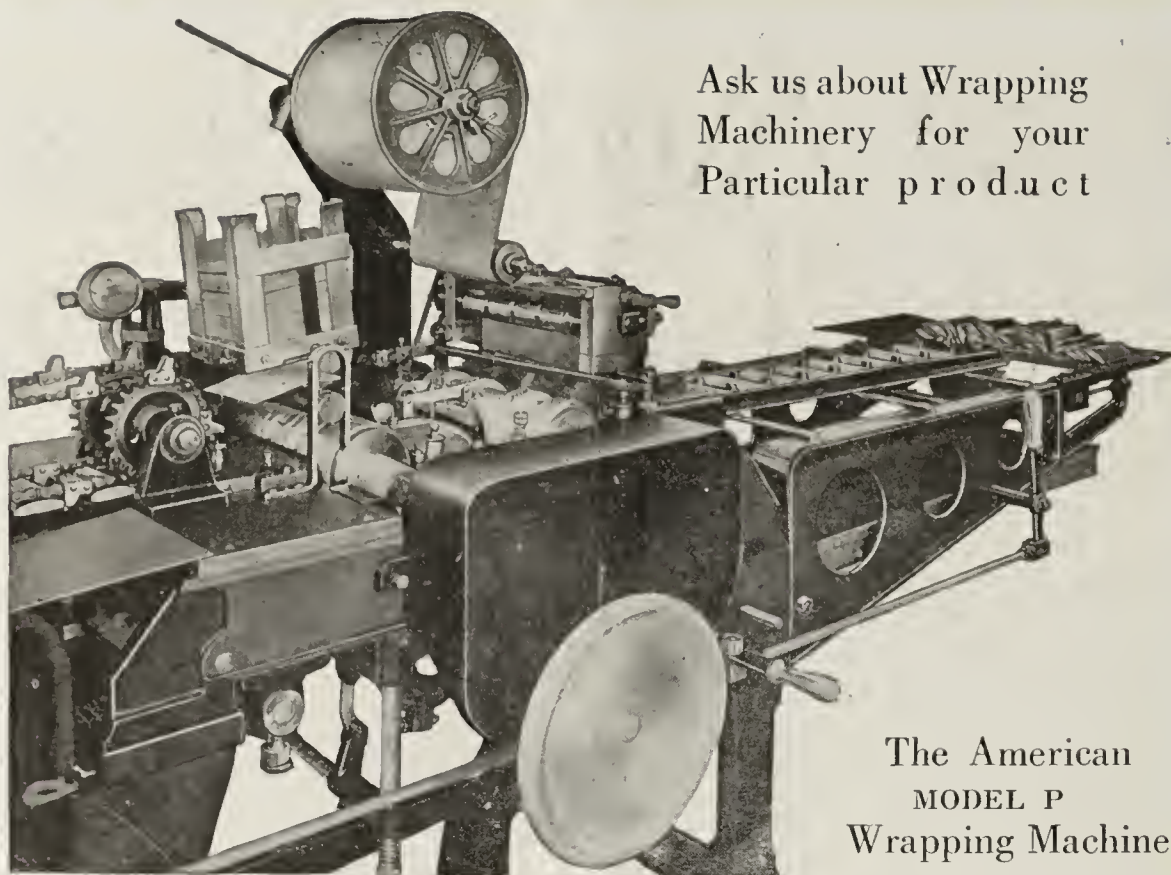
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### Federal Cold Storage Legislation

By W. C. Kirk

### National Wholesale Grocers' Convention





Ask us about Wrapping  
Machinery for your  
Particular product

The American  
MODEL P  
Wrapping Machine

# Are You Ready?

**E**VERY keen-eyed business man can foresee the day, not so very far off when orders are going to be coming in again with a rush.

Are you, in your plant, ready to take care of maximum business with your present equipment? For instance,

## How About Your Wrapping Machinery?

Is your equipment for wrapping your products not only up-to-date, but is it as efficient as it ought to be? Slow, uneconomical, or otherwise unsatisfactory wrapping methods should not be tolerated in the modern plant, because the right wrapping machinery, made to handle *your product*, will pay for itself again and again in savings.

It certainly will pay you to look into our ability to cure your present wrapping problems. We are specialists, with twenty years' wrapping machinery experience behind us, and the return of the convenient coupon below will place our entire organization at your disposal, without obligation.

TEAR OFF HERE AND MAIL TO

The American Machinery and Equipment Corp.

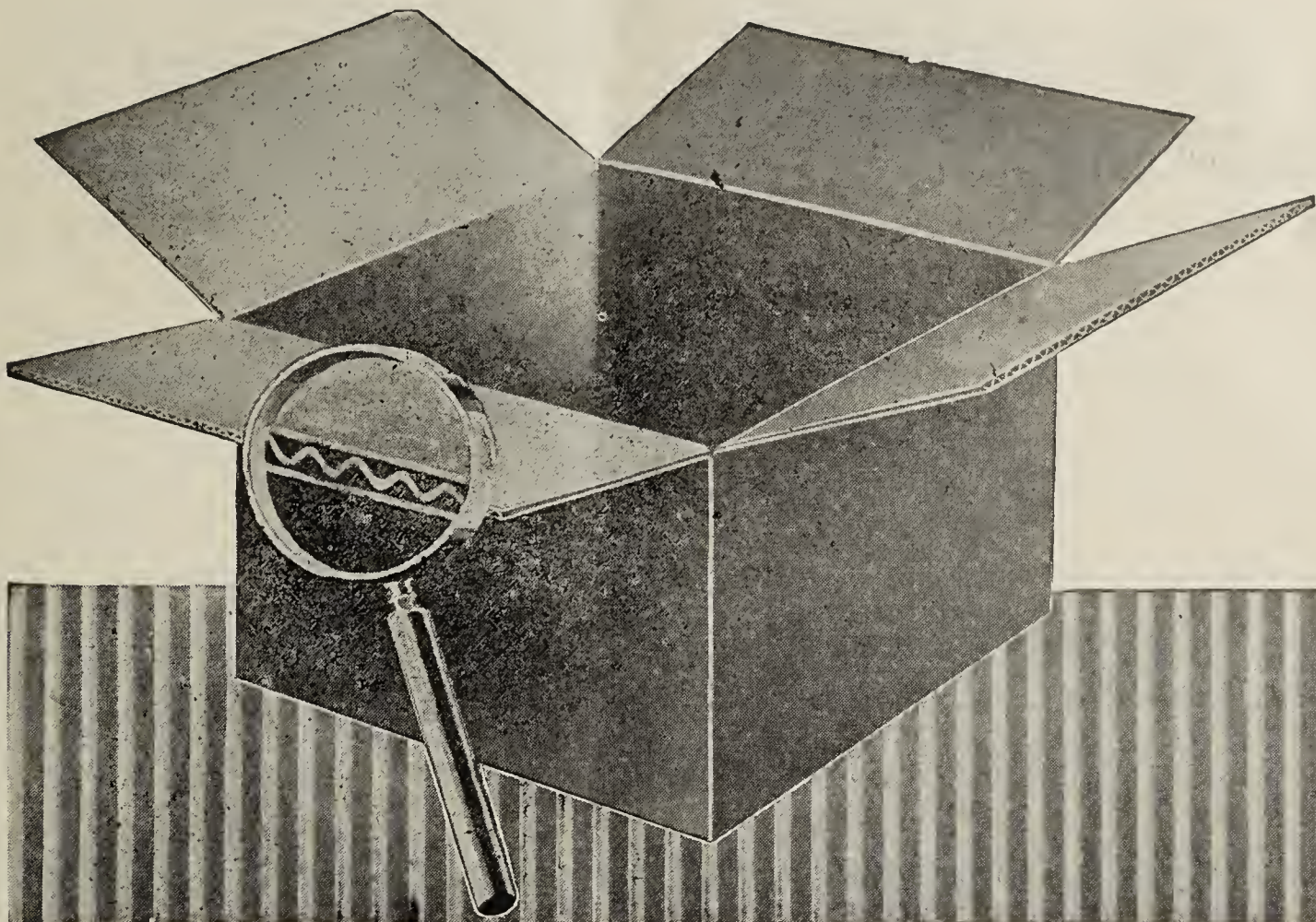
265 Washington Ave.,  
NEWARK, N. J.

**P**LEASE mail me without obligation, information regarding  
the economical wrapping of .....

Name .....

Company and Address .....





## Pack It Right

A Chicago jobbing house using nearly 200,000 shipping cases a year, found that *H & D Corrugated Fibre Boxes* cost them about 50 per cent less than the containers they had previously used. They also found that by using these boxes they reduced freight charges about 35 per cent and practically eliminated breakage and concealed losses.

The special construction of *H & D Standard Canned Goods Boxes* makes them adaptable to heavy shipments. Their strong cushioned walls are built to stand up under falls and blows that put the ordinary canned goods box out of business. Though highly resilient, they maintain a firm rigidity under sharp impacts which might otherwise damage their contents. Thorough protection and real economy are the keynotes of *H & D* better packing.

H & D Corrugated Fibre Boxes can save you money in five ways. Send us, charges collect, a regular shipment of your goods. Our experts will repack it in a container especially designed to meet its requirements, and will return it to you, charges prepaid. You can then judge for yourself the superiority of the H & D method of packing. This service is absolutely free, and places you under no obligation. Write us.

### THE HINDE & DAUCH PAPER CO.

825 Water St.

Sandusky, Ohio

Toronto, Canada: King St., Subway & Hanna Ave.



# AN IMPORTANT ROLE

*Yeast has been called the soul of bread*

It not only leavens it, but adds food value; develops its flavor and adds a rich vitamine content, which renders it more easily digestible.

INSIST ON

## FLEISCHMANN'S YEAST

*Best for 53 years*

THE FLEISCHMANN COMPANY

Every Kind of

## WARD'S

FAR FAMED

## BREAD AND CAKES

is the finished and perfected result of skill, science, experience, and the use of highest grade materials.

WARD BAKING COMPANY

New York  
Brooklyn

Pittsburgh  
Boston

Providence  
Chicago

Cleveland  
Baltimore



# The American Food Journal

The National Magazine of the Food Trades

Published Monthly by  
The American Food Journal, Inc.  
Floral Park, N. Y.

Business and Editorial Offices: 25 East Twenty-sixth Street, New York

J. T. Emery, President

## The Editor's Column

### OUR CIRCULATION GROWING

Within the past several weeks more than 200 new subscribers have been added to the circulation list of THE AMERICAN FOOD JOURNAL, a striking proof of the need for such a publication in the food field. As publishers, we know that this increase in subscribers, under present conditions, augurs well for the continued growth of "The National Magazine of the Food Trades."

### GIVING PEOPLE WHAT THEY WANT

The secret of success in any business is giving people what they want. The food industry has wanted and needed just such a publication as the editors of THE AMERICAN FOOD JOURNAL are now striving to give it. Frequent comments come to us unsolicited that seem to show that, in a measure, at least, we are giving our readers what they want. One subscriber recently said: "I want to compliment you on the remarkable improvement in the character of the editorial and make-up of THE AMERICAN FOOD JOURNAL within the past few months."

### BREWERIES AS FOOD PLANTS

In the next issue an article will be published which will convey a practical suggestion to owners of breweries as to how these plants can be profitably converted into the manufacture of food products.

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Chicago Office: 123 West Madison Street; H. B. Boardman, representative. Boston Office: 44 Bromfield Street; F. K. Kretchmar, representative.

Yearly Subscription price, \$3.00; single copies, 25 cents; back copies, 35 cents; Canadian Subscription price, \$4.00; Foreign, \$5.00.

Entered as Second Class Matter at the Postoffice at Floral Park, N. Y., under the Act of March 3, 1879. (Permit pending.) Advertising rates furnished on application.

Application for transfer to Floral Park, N. Y., pending.



# Why Efficient Sales Managers Are Rarely Sold on Their Company's Advertising

OF all the officials in a big business, the sales manager can most readily be held accountable when sales are not up to the mark. This explains why the efficient sales manager rarely enthuses over advertising matter submitted for his consideration.

For instance, he is invited to look at a pretty picture of the food he is trying to sell—and is told that “it has strong appetite appeal.”

This declaration doesn't stimulate his appetite a particle. Back in his mind he knows there is a bigger and stronger story about his food—a story that cannot be put over by a pretty picture alone.

Or perhaps some text, called “copy,” is submitted to him for approval. He looks it over and recalls that many of his \$30 a week salesmen put over stronger selling points every day.

Forced to compromise, to catch a closing date, he joins in okehing a campaign—minus his personal enthusiasm.

## Selling Secrets Sacredly Safeguarded From the Public

The sales manager knows, and other heads of the organization know, that there is something missing in the company's advertising—some element of approach or appeal or conviction—conspicuous by its complete and perfect absence.

But possibly because he lacks technical training in publicity matters, or because he is too busy, he does not point out the fault.

To sell the public properly on a food, the advertising agency must have technical knowledge and facilities for securing and presenting fundamental selling ideas. An aggregation of mahogany desks and fixtures, copy-men and artists, “vizualizers” and solicitors mean nothing to the manufacturer of a real food product.

If a food has actual dietetic, chemical and nutritional value—the public should know it. The “appetite-appeal” stuff has been done to death.

## Why Paint a Pretty Picture—If You Have a Real Story to Tell?

Every woman knows how good a baked ham or baked beans look; she knows the appeal in a saucer of peaches;

the aroma of frying bacon; the results of baking-powder cakes and biscuits; the flavor of jams, jellies and various soft drinks, etc., etc., etc.

But every woman cannot possibly know the actual health qualities of a certain food or beverage—unless the advertising agency is technically qualified to evaluate these matters, and then put on paper the argument that sells them.

There are two kinds of advertising today: Advertising that is **looked at**, and advertising that is **read**.

To get the public to read your advertising it must contain news.

A leading New York newspaper editor said: “If a dog bites a man that's not news; but if a man bites a dog—that's news.”

If you're not giving the public news about your product—why should the public read your advertising? And further—why should it buy your product?

Of all the advertising published today the advertising concerning foods can be made the most interesting. But it must be **written**—not **pictured**—and by a man who knows his subject.

There never was a time when men and women were so interested in what they eat and drink. And there never was a time when this fact could more readily be capitalized than right now.

## Where Business Apathy Ends and Interest Begins

The foregoing remarks briefly cover a condition that a leading food manufacturer may wish to remedy. For this purpose the services of the E. W. Hellwig Company are hereby advertised.

The E. W. Hellwig Company are accredited advertising agents—a company composed of experienced food men. Its staff consists of men and women of wide experience in advertising and merchandising; in scientific and dietetic research. This is an advertising agency that does not generalize—but specializes in selected fields—foremost among which are foods and products sold through grocery channels.

Many interesting facts can be said about the E. W. Hellwig Company's business. But what is more interesting to you are the facts that the E. W. Hellwig Company can say about your business.

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# The American Food Journal

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## Food in Its Relation to Health

### Education to Develop Better Food Habits Will Help Everyone in Food Industry

BY LULU GRAVES

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UNIVERSITY OF ILLINOIS  
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**D**URING the past few years so much attention has been given to food in its various relations that a great deal has been accomplished which is not only beneficial but gratifying. Great improvement has been made in the quality of food materials on the market, the containers in which they are transported and kept, and other conditions pertaining to the handling and caring of food supplies. Credit is due the National Canners' Association for improvement in the quality of food materials, particularly in canned goods. Activity on the part of the public, competition, or some other force has been instrumental in bringing about more cleanliness in grocery stores and other shops where food is sold as well as in the methods of transportation.

Concurrent with this movement has come a greater interest on the part of the housewife in the preparation of food for her family. A few years ago the person who gave intelligent thought to the selection of his diet was considered a faddist but today he is considered a sensible person. For a number of years dietetics has been given more or less recognition in hospital and medical circles but outside of these circles the subject had little significance.

#### Importance of Proper Diet

During the war period, when production at top notch was necessary, every means was used to eliminate lost time, a number of large manufacturing concerns found that much time was lost because of minor ailments, such as indigestion, headache, etc., and decided that these might be avoided if proper habits of living and proper habits of eating were taught to their employees. Partially as a result of this and partially for other reasons, home economics trained women are now being put in charge of the cafeterias and lunchrooms of many industrial plants and wholesale houses. Public health organizations are asking for dietitians to teach proper selection and proper cooking of foods in the homes in which they are interested; the demand is constantly increasing for the better trained, more competent woman to supervise the dietary departments of hospitals and work with medical men. With such large numbers of people of widely varied interests and occupations giving thought to their food and to food in its relation to health, an increasing responsibility is placed upon all of us who have anything to do with feeding people. Information is being sought which it behooves us to be ready to give, new standards and new habits are being established which we must meet, and further progress should be encouraged at all times.

That successful accomplishment is governed largely by one's physical and mental condition is an accepted fact, that one's physical and mental condition is controlled to

a great extent by diet is also pretty generally conceded. It naturally follows that everyone should become sufficiently informed in the subjects of food composition and dietetics to be always at his best, so far as his nutrition is concerned. In a conversation not long since with two men representing large and well-known manufacturing firms, this subject was under discussion. Mention was made of the common practice among men who are away from home a great deal, and must therefore depend upon restaurants, hotels, or other public places for their food, of forming a habit of choosing much the same things day after day and giving no thought to the fact that they were eating a decidedly monotonous and poorly chosen diet, then in order to relieve the monotony catsups, much pepper and rich, highly seasoned sauces were used freely. A continuation of such practice cannot fail to disrupt some part of the digestive tract in the course of time.

#### Reformation in Eating Habits

One of these men stated that he had long since governed his business transactions to some extent by the state of his liver. If his liver was functioning properly, he was happy and consequently had a gratifying day in business, but if his liver was not functioning properly, he never attempted anything of importance. The other man reminded me of a conversation with him a year or more previous in which I had mentioned the prevalent habit among men of eating ham and eggs for breakfast morning after morning—two foods high in protein eaten together repeatedly. He continued by saying, "Before that time I had always eaten ham and eggs for breakfast, since that day I have not once eaten them together for breakfast. While following the first named practice, I never expected to do much business until nearly noon and always felt it was impossible to get very far with business men early in the morning; since changing that practice I find I can do business just as well at nine o'clock as at eleven o'clock. Several men in our office have made the same reformation and all are agreed as to results." This may sound somewhat like the customary advertisement for a patent medicine but it is not meant even as an endorsement of dietetics. It is merely an illustration of the type of thing that is being done by hundreds of men and women all over the country.

It is an accepted fact among those who have much to do with diseases of metabolism that a large percentage of these diseases are preventable; in other words, through correct habits of eating and correct habits of living, diseases of the digestive tract would be greatly reduced. Results which seem almost miraculous have been obtained in the reduction of yellow fever, typhoid, tuberculosis and other communicable diseases through education of the people as to



their cause and how to prevent them. Can we not look forward to similar results with diseases of metabolism through a better education of both the professional and non-professional classes in the cause and prevention of these diseases. We have come to associate certain diseases such as Bright's disease, so-called rheumatism and diabetes with middle life or old age. And why? Not because they have any direct relation with this period in life, but because, all too frequently, they come on as a result of long periods of indiscretion of some sort either in habits of eating or habits of living. Hence, it is desirable that some education in dietetics be given early in life.

#### Incorrect Habits of Eating

Dietetics pertains to a proper diet for everyone—sick or well, old or young, one working at hard labor or leading a sedentary life; dietotherapy implies the treatment of disease by diet. With a better knowledge and application of dietetics there would be much less need for dietotherapy, since it is easier to prevent disease than to cure it. Diseases which are treated entirely or largely by diet, such as gastric and intestinal disorders, liver and kidney disturbances, diabetes, etc., are termed diseases of metabolism. Diseases of metabolism are to a great extent brought on by incorrect habits of living or incorrect habits of eating. Incorrect living includes any circumstance which may cause one to be unduly tired or nervous; it may be overwork, worry, lack of sufficient sleep, irregular habits, or an environment which leads to despondency or irritation. The details of these handicaps to physical well-being may not be discussed here further than to say that the flow of digestive secretions may be retarded by fatigue or nervousness. Incorrect habits of eating include—improper selection of food, improper cooking of food, not thoroughly masticating the food, eating at irregular times. Proper selection of food implies a sufficient amount of each element to meet the needs of the body. These may be classified briefly as follows: starches and sugars which furnish to the body energy in the form of heat or motility, are found chiefly in starchy vegetables, bread, cereals, fruits, cakes and confections; proteins which build and repair cell tissue and furnish some energy are found chiefly in meat, eggs, milk, cereals and legumes; fats which furnish energy are found in most easily assimilable form in cream, butter, egg yolk, and vegetable oils; mineral salts which are beneficial for teeth, bone, etc., are most abundant in milk, meat and green vegetables; other essential factors about which less is known are generally termed vitamins though nutrition experts do not accept this as the best terminology for them. These are further classified as fat soluble A, water soluble B, anti-scorbutic C. The sources of fat soluble A are milk, eggs, fat of animal tissue, green leaves, and some vegetables containing yellow pigment; lack of this element in diet retards growth and causes an eye disease called xerophthalmia. It is more important for children than mature people. The sources of water soluble B are milk, eggs, many fruits, especially citric fruits, prunes, apples, and pears, vegetables—tomato and spinach containing the highest percent of all vegetables. Everyone needs this element in the diet, a deficiency of it lowers the metabolism, retards growth and decreases appetite. Less is known about anti-scorbutic C than of the others. It is necessary for proper dentition and for prevention of scurvy. Many factors affect the potency of this element so that it is difficult to say much about it. The chief sources are milk, oranges, lemons, tomatoes, cabbage and carrots. The above classification is made with reference to the chief points to be considered in the relation of food to health and makes no pretense of being a complete classification from the standpoint of the scientist.

#### The Effect of Method of Cooking

A menu may contain the required amount of the above named food factors in exactly the right proportion but if the food materials are not properly cooked the body may not get the desired benefit. For example, proteins are coagulated by heat but toughened by a high temperature. If protein food materials are cooked at too high a temperature the body will not be able to utilize them to the extent that

it should. Some of the essential factors in vegetables are soluble, and may be lost in the cooking if proper methods are not employed; if fats are cooked at too high a temperature substances are formed which are irritating to the digestive tract. The effect of cooking upon the palatability of food has been given more or less attention but the effect of cooking upon digestion has been given very little thought, yet it is of much importance.

Not thoroughly chewing the food is making a bad beginning for its digestion. Starch digestion should be begun by the saliva in the mouth; if the food is not well mixed with saliva, this deficiency must be remedied in some other part of the digestive tract. If the food is finely divided there is less danger of particles lodging in the crevices of the mouth and about the teeth which may ferment and cause trouble either through these toxic substances getting into the system or through damage to the teeth.

A great deal of literature on these subjects is available today so there should be no difficulty in obtaining as much information as one wishes on food composition and food principles.

#### How Our Readers Can Help

What has all this to do with the readers of The American Food Journal? To those of you who are in the front ranks it is significant because you are helping greatly in this education. Who is better fitted to tell us of conditions and processes affecting food products than the man who makes that his business? And naturally, he controls to a great extent these conditions and processes. The business man is not going to do a good business if the housewife, dietitian, nutrition worker, or anyone else interested in feeding people well, or in keeping people well by right feeding, cannot indorse his products; therefore from both standpoints—because he has high standards of his own and because it is good business—the progressive merchant is going to help in this education. The man who is not in this class is going to be interested in the subject eventually for he will be a victim of this education, or movement for a higher standard of foods.

Several organizations, both state and national, are taking an active part in furthering any part of this work which lies in their province. The activities of the National Canners' Association, the National Hotel Men's Association and the American Dietetic Association are best known to the writer though no doubt there are others taking an equally commendable part. The two first named organizations are older and better known to most of you than is the last. The American Dietetic Association is but a little more than three years old but it has a membership of about five hundred. The members include hospital dietitians, women in charge of industrial or commercial lunch rooms, women in charge of food clinics or other welfare work relating to nutrition, teachers of dietetics, and the majority of our nutrition experts. Among other purposes this association hopes to help hospitals and other institutions to improve their dietary departments. Through the section for administration dietetics there is being accumulated information on food materials and kitchen equipment with the view of having accurate information on these things which may be available for members of the association. This will be acquired through the members having experience and knowledge which enables them to pass judgment upon that which they specifically represent.

Public health organizations, medical men, hospitals and everyone else interested in improving conditions relative to the health of the nation are emphasizing the treatment of disease by preventive measures. What can be more important in the prevention of disease than right habits of living and right habits of diet? The subject of nutrition and dietotherapy are so new that we still have much to learn about them. With the nutrition expert, the medical man, and the dietitian all stressing the importance of proper food, and business men who are engaged in industries connected with the production and marketing of foods maintaining high standards and in every way doing their part the future holds great promise of achievement, by application of common sense to the promotion of health.



# What of Our Peanut Oil Industry?

Reached Its Peak in 1919—87,000,000 Pounds Produced That Year  
May Not be Duplicated Soon

BY HERBERT S. BAILEY

**H**AS the production of peanut oil in the United States reached its maximum? Or does the present decrease in the pressing of peanuts mark merely a temporary drop in what will grow to be one of our really important vegetable oil industries? This is a question of interest not only to the users of peanut oil but to the peanut growers of the South, the shellers and confectioners.

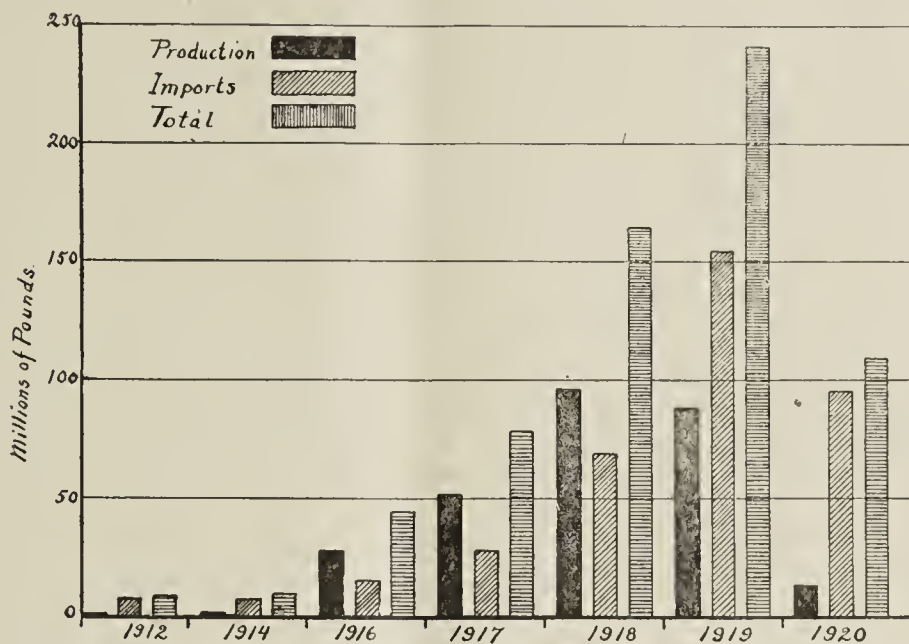
Ten years ago when the Department of Agriculture began to preach the growing of peanuts in those sections of the cotton belt devastated by the boll-weevil there was less than ten thousand pounds of peanut oil made in the United States. Peanuts had for years been raised in Virginia and the adjoining states but the crop was taken almost exclusively by the shellers, and went into the confectionery and peanut butter trades. Farther south "goobers" were planted for the hogs but seldom dug except by the "razor-back" for himself. It appeared logical that as the decrease in cotton would deprive the oil mill of its grist and the farmer of his concentrated feed, peanuts should be planted. Very rapidly the center of peanut production moved southward and Texas, Alabama and Georgia became great peanut growing states.

Each year up to 1919 saw produced in this country almost double the peanut oil of the previous year; then in 1920 there was a big slump and from some 87,000,000 in 1919 the 1920 output fell to about 13,000,000 pounds. Incidentally it may be mentioned that not all this was made of home grown nut either.

## Imports Large in 1920

We imported during 1920 110,000,000 pounds of shelled peanuts, a large portion of which doubtless went to the oil mills. For the corresponding period of 1919 the importations were a little less than 24,000,000, but over 66,000,000 in 1918. The bulk of last year's imports, however, came in the first six months, as from July to December there were only 8,853,000 pounds shelled and unshelled nuts entered. It is interesting also to note that in 1920 we exported only 1,425,000 pounds of peanut oil but in the last six months of 1919 over 4,341,000 pounds. Our exports of this oil up to 1919 were negligible, never having reached 200,000 pounds in any year and almost always less than 5 per cent of the quantity imported. A glance at the accompanying table and chart will show this statistical story of our peanut oil trade. The 1919 peak of production, importation and consumption was followed in 1920 by a great slump in production and consumption, with a somewhat less marked reduction in imports.

But all the figures, interesting as they are, might be considered as mere details of the general trend of most commodity statistics during the war and reconstruction years were it not for some fundamental economic conditions in America's vegetable oil industry.



Peanut Oil Produced and Imported in the United States, 1914 to 1920

## Produced from Waste Materials

With the single exception of linseed oil, which is not an edible product, we in the United States produce all our fats and oils from waste materials. That is all are actually byproducts of other industries. Our cottonseed oil, over a billion pounds of it, is a by-product of the cotton business. Corn oil, nearly a hundred million pounds a year now, a by-product of the starch and hominy plants, the lard tallow and similar animal fats, by-products of the packing houses, and these with the exception of less than a million pounds of olive oil, are all the edible oils we have

from domestic sources. If there is a large demand for peanut oil, which cannot be filled by any other oil such as cottonseed, or if we can produce peanut oil as a by-product in competition with foreign oil, then our peanut oil industry has come to stay.

Fortunately for the grower of peanuts and the oil mill pressing them the Department of Agriculture has ruled that butter substitutes to be entitled to be called nut margarines must contain only oils made from peanuts, cocoanuts or other true nut oils. Cottonseed or soya bean oils cannot, therefore, be used by the margarin manufacturer if he wishes to enjoy the advantage of calling his product a nut margarin. Just why a bean that happens to ripen below the ground as does the peanut should be recognized as a nut, while its first cousin, the soya bean, that grows above the ground should not be entitled to this classification, is somewhat difficult to understand, but the "gods have decreed," therefore let no man question. The great increase in the consumption of peanut oil for margarines from some 2,000,000 pounds in 1912 to almost 28,000,000 pounds in 1918 was due almost entirely to the increased popularity in the United States of nut margarines. Whether or not these margarines have become sufficiently well established in the favor of the public during the years of high butter prices to retain this favor now that butter is getting nearly to pre-war levels is difficult to say, but undoubtedly the United States will continue to use them in large quantities.

## The Question of a Tariff

Beside the margarin industry there is no outlet for peanut oil which cannot be filled by cottonseed oil except the comparatively small demand for virgin peanut oil, readily supplied from foreign sources. This being the case American peanut crushers must be able to obtain their raw materials at a price which will make competition with the Oriental oils possible unless, of course, a sufficient tariff to protect the American crushers be placed on peanut oil.

There are three possible sources of peanuts for the American crusher, (1) the waste and low-grade nuts from cleaning and shelling plants, peanut butter and confectionery manufacturers, (2) comparatively low-grade or surplus farmers' stock, which is of less value to the shellers than the oil mills, and (3) foreign, largely Oriental peanuts.



There has been an increasing demand for shelled peanuts by the peanut butter and confectionery trades and for Virginias in the shell by the roasters. This, coupled with the high price, has naturally decreased the proportion of culled nuts available for the oil mill. As the price of farmers' stock goes down and the value of shelled nuts of the lower grade decreases, it is possible that the shellers will be able to sell profitably only the better grades, which would leave an appreciable quantity of by-product peanuts for the oil mills. This source of peanuts, however, will never be great enough to support anything but a very small oil industry.

The possible increase in available supplies of farmers' stock obviously depends on the price offered by the shellers and that of peanut oil. Probably unless the acreage planted to peanuts is curtailed the oil maker may expect a fairly large supply of peanuts from this source. As yet the majority of farmers in the peanut growing section of the South do not appreciate the fact that it is far better for them to feed their hogs on peanut meal than on the whole nuts. Extensive experiments made at the Texas and other experimental stations have conclusively demonstrated that hogs fed on whole peanuts will produce only soft hams and bring much less in the market than those fattened on peanut cake and hulls. It is true that the hogs will do their own digging but it would seem possible that with the cake from a ton of peanuts worth as much or more as hog feed than the original peanuts the farmer could afford to dig and sell his crop to the oil mill, taking back the cake after the oil had been removed. When the grower raises more hogs and cattle and learns the true value of peanut cake he may sell his peanuts at such a price that peanut oil will really be a by-product and compete with cottonseed oil for use in lard substitutes and in the salad oil trade.

#### Cheaper to Import Oil Than Peanuts

The importation of peanuts from the Orient promised a few years ago to become a big business but at the present time it is cheaper to import peanut oil itself than to pay the freight on even the shelled nuts. This is due not only to high freight rates and the poor domestic market for oil cake as feed or fertilizer but also to a depreciation in the value of goods during transit. We have been suffering a falling market and few have cared to buy nuts in China at a price which might be above that of the domestic market on date of delivery. There is also grave danger of spoilage during ocean shipment of shelled nuts. While peanuts will keep in the shell if properly cured and warehoused for six months or more, when once shelled they begin to get rancid and often insect infested, especially under the usual conditions of water transportation. A

tariff on peanut oil would of course tend to increase the demand for foreign peanuts but such a tariff without a corresponding duty on Oriental peanuts would steadily affect the market for American grown nuts, and it is hardly probable that Congress would favor the oil mills, which are comparatively few, rather than the farmers with their greater political influence.

That a permanent peanut industry in the United States is desirable can scarcely be questioned. Our people are learning rapidly the great food value of these nuts, whether consumed in candy, as peanut butter, or as a salad oil or in nut margarines. We certainly wish to be independent of foreign countries for all our raw materials just as far as possible and our proximity to Canada makes us the logical source for her supply of these commodities she cannot raise herself. She realizes this apparently, as in March, 1921, she imported from us nearly 1,400,000 pounds of peanuts. This was however, only about one-third of the amount we brought in from Japan and China.

#### Assured Supply of Peanuts Necessary

To maintain a peanut oil industry we must have an assured supply of peanuts as few crushers can afford to go into the business unless they can count on sufficient raw material to supply any demand they may create for peanut oil. Without the oil mills the peanut growers are restricted to a comparatively narrow outlet for their peanuts and the shellers must either install oil presses or dispose of their by-products at a very low price. Perhaps most important of all to the ultimate consumer, the existence of peanut oil mills guarantees to him better grades of whole peanut products at more reasonable figures than if there were no outlet for the poorer grades.

#### PEANUT OIL IN THE UNITED STATES SINCE 1912

	1912	1914	1916	1917
Production in lbs. . .	454,000	1,006,000	28,534,000	50,499,000
Imports . . . . .	7,626,000	7,365,000	15,674,000	27,405,000
Total . . . . .	8,080,000	8,371,000	44,208,000	77,904,000
Exports . . . . .	7,000	96,000	171,000	145,000
Balance . . . . .	8,073,000	8,275,000	44,037,000	77,759,000
Used in lard . . . . .	1,687,000	2,144,000	17,869,000	12,209,000
Used in margarin . . .	2,453,000	3,137,000	5,335,000	10,498,000
	1918	1919	1920	
Production in lbs. . . . .	95,934,000	87,606,000	13,085,000	
Imports . . . . .	68,466,000	154,052,000	95,124,000	
Total . . . . .	164,400,000	241,658,000	108,209,000	
Exports . . . . .	75,000	*8,684,000	1,425,000	
Balance . . . . .	164,325,000	232,974,000	106,784,000	
Used in lard . . . . .	27,912,000			
Used in margarin . . . . .	21,593,000			
Total reported used . . . . .		190,176,000	79,291,000	
On hand Dec. 31st . . . . .		21,411,000	30,688,000	

\*This figure is only approximate as the Federal reports show only exports for last six months of 1919 and the quantity in the table is double that of this period.

## Pasteurization a Safeguard With Milk from Untested Cattle

BY H. T. BALDWIN

Dairy Division, Bureau of Animal Industry, U. S. Dept. of Agriculture

THANKS to the advancement of science and the characteristic promptness of the American business man in applying scientific knowledge to the betterment of our industries, the city milk supplies in the United States are probably on a higher level of quality and sanitation than will be found in almost any other country.

In the modern city milk plant, effort is made to handle the milk in such a way that only a clean healthful product will be delivered to the consumer. The requirements of city milk ordinances are stringent in this respect, and the health departments in many cities see that the ordinances are enforced. Aside from this consideration, however, it has been found good business on the part of the milk plant to turn out the best possible grade of milk. The milk on ar-

riving from the country producer is clarified to remove any sediment, pasteurized to make certain that there will be no disease germs in the product, and placed in clean bottles where it is held at a low temperature until delivered on the doorstep of the consumer.

Pasteurization is compulsory in most of the larger cities, and many of the smaller cities and towns now require it. In dealing with any problem concerning the marketing of milk from cows which have not been tuberculin tested and are therefore not known to be free from tuberculosis, it should be remembered by the consumers in the larger cities and in the other cities that pasteurize, that from the standpoint of any danger from the tubercle bacillus the



question is of little direct importance to them, inasmuch as the milk which they drink is pasteurized before it reaches them.

#### Pasteurization for Safe Milk

Just how or when bovine tuberculosis reached the cattle of this country is not known; but it is present to a greater or less extent among dairy cattle in many sections. Results of investigations on the relation of bovine to human tuberculosis have shown that the bovine type of tubercle bacillus may cause tuberculosis in man.

In discussing the question of marketing milk from cows not tuberculin tested, therefore, it is clear that there is only one condition under which such milk should be sold; and that is when it is properly pasteurized. Pasteurization should always consist of treating milk to 145 deg. F. and holding it there for 30 minutes. Such a process destroys the bacilli of tuberculosis, as well as other pathogenic organisms, and renders the milk safe, from a disease standpoint. Scientific research has shown that under ordinary conditions all harmful disease germs, including the tubercle bacillus, which is one of the most resistant, are killed by holding the milk 30 minutes at a temperature of 140 degrees F. Since the acidity of the milk as well as other factors has an effect on the thermal death point of the organisms, the pasteurizing temperature has been set at 145 degrees to make sure of their destruction. Such a process if carried out properly does not injure the taste or lessen the value of the milk as a food, and the only noticeable effect on the milk is that in some cases the cream line is slightly reduced.

#### Reaching the Goal Gradually

Except when produced by accredited or other tested herds and under extremely sanitary conditions, then, all milk should be pasteurized. It would of course be desirable also, from the consumer's point of view, that every city and community should require tuberculin testing; but it is realized that to do so suddenly might work considerable hardship on the dairymen in the surrounding territories, and result in a serious curtailment of the milk supply. Some cities have already passed ordinances requiring tuberculin-tested herds, and the milk is now produced on that basis. Others are going at this problem gradually, and requiring that before a permit for the retailing of milk is issued to any new herd the cows in such herd must be tested for tuberculosis and the reactors disposed of.

The problem of eliminating tuberculosis is one which is of vital concern to the dairymen who produce the milk, for they are the ones who suffer an economic loss when tuberculosis enters the herd. Tuberculosis is catching. It spreads from cow to cow in a herd until many of them are affected. This may not attract much notice from the owner, as the disease is slow to develop, and a cow may be affected with it for several months, or sometimes years, before any signs of ill health are seen. This slow development is the chief reason for the great loss it causes the farmer. He does not suspect its presence in his herd until perhaps a large number are diseased, the vitality of the cows is lowered, and production of milk falls off. It is this decrease in production, or the inability of the infected cow to produce milk economically, that causes the dairyman his greatest loss. Testing for tuberculosis and the elimination of the diseased animals before they have had a chance to infect other cows in the herd, results in a saving generally far greater than the amount lost through condemnation of any animals which might be infected.

#### Great Increase in Testing

That the producers realize the necessity of disease-free herds is indicated by the great increase in testing which is done each year, and by the fact that buyers of cattle are demanding tested cattle more and more.

Control with a view to eventual eradication of tuberculosis in cattle is being accomplished by the systematic efforts of Federal and State authorities, in cooperation with cattle breeders' associations and herd owners.

A plan was adopted in 1917 whereby herds of cattle passing the required number of official tuberculin tests should be certified or accredited as free from tuberculosis. An ac-

credited herd is one that has passed successfully two annual or three semi-annual tuberculin tests applied by regularly employed veterinary inspectors of the Bureau of Animal Industry or of the State where the cooperative work is conducted, and has otherwise complied with the regulations governing the work. There are now more than 6,000 herds which have been accredited as free from tuberculosis, and thousands of others are on the waiting list to be tested as soon as testers are available.

#### Tuberculosis Eradication by Counties

During the early work of eradicating tuberculosis from livestock it was only possible to induce an owner of a herd here and there to submit it to the tuberculin test. The sentiment for the work, however, gradually increased, and in a short time there were more requests for herd testing than could be attended to by official veterinarians. The time consumed in travel back and forth long distances to test cattle made the work comparatively expensive. A plan was advocated of having all the herds within a small area or a county placed under supervision and tuberculin tested. This method is known as the "area plan" of eradicating tuberculosis, and it is being carried on in several of the States. In New York, one of the largest milk-producing States, ten counties have already adopted the area plan of eradicating tuberculosis, and all of the cattle in those counties will be tested as rapidly as inspectors can do the work. Tuberculous animals are removed from herds whenever found; premises are cleaned and disinfected; and no cattle are added to these herds except animals which have successfully passed the tuberculin test. It is considered advisable to secure animals for addition to tested herds, only from herds under State and Federal supervision for the eradication of tuberculosis.

From a health standpoint, those chiefly concerned with the question of tuberculosis are the dairymen who use milk from their own cows which are still untested, and others who are receiving unpasteurized milk from such herds. Even here it would seem that the danger might be overestimated, when it is remembered that milk is only one of a number of sources from which the bacillus of tuberculosis may come, and that the lack of milk in the diet might cause a diminishing of resistance to infection from other sources. From England, where the problem is more serious, due to less general pasteurization of milk supplies, comes the following opinion, published in *The British Food Journal*:

"At the concluding session of the Conference of the National Association for the Prevention of Tuberculosis, at Liverpool, Sir Robert Philip, M. D., presiding, Dr. MacFadden, of the Ministry of Health, opened the discussion. He said that the question of human infection with tuberculosis from milk was important, but the lack of milk might carry with it the danger of lowered resistance to tuberculosis infection from other sources."

#### Year-Old Sweet-Cream Butter Outscores New York Extras

After remaining in storage for year, samples of sweet-cream butter recently inspected at Norfolk, Va., scored higher than the highest score for butter quoted on the New York market. These samples, which received scores averaging 93.47, were representative of 1,000,000 pounds of butter packed for the United States Navy under the supervision of the United States Department of Agriculture. The scoring was done by a specialist from the Dairy Division and a representative of a commercial butter firm in New York City.

This butter was made from a perfectly sweet cream, with a comparatively high salt content and low moisture. The moisture content did not exceed 13.5 per cent. After one year in storage, only one sample scored as low as 92 1-2. Of the other 50 samples, 24 scored 94, 2 scored 93 1-2, and 24 scored 93.

Consumers who are accustomed to a pronounced flavor in butter do not at first show favor to sweet-cream butter, as it is somewhat lacking in this respect when fresh. A demand for sweet-cream butter, however, is growing.



# Federal Cold Storage Legislation

## Federal Bill Likely to Pass at this Session of Congress—Some Possible Features

BY W. C. KIRK

Legal Department, Armour & Co.

IT seems almost certain that a Federal cold storage law will be enacted in the very near future, probably during the special session of Congress. The Sixty-sixth Congress came very nearly passing such a law; in fact, the Senate and House each passed a bill, and, after conference, the Senate adopted the conference report, but, due to the closing of the session, it failed to pass the House.

Such action by the Sixty-sixth Congress, however, served to harmonize, to a large extent, the conflicting views of various members of the Committee of Agriculture in the two houses, and it is believed that bills which have been introduced at the special session patterned along the lines of the conference reports will not meet with very serious objection in either branch of Congress.

There are at the present time some six or seven cold storage bills pending in Congress. H. R. 282, by Congressman Hutchinson, and S. 812, by Senator Frelinghuysen, are companion bills and follow the conference reports on cold storage with only slight modifications.

### Conference in Chicago

A conference of industries affected by cold storage legislation was held in April in Chicago. This conference was attended by representatives of approximately seventy-five associations, warehousemen and large users of cold storage. The sentiment expressed at the conference very clearly demonstrated that those chiefly affected by such legislation are not opposed to a reasonable cold storage law and that the only objections have been to certain provisions in the previous bills which would seriously interfere with the normal marketing of perishable commodities.

At the conference above referred to, the chief points discussed were the following:

1. The kinds or classes of goods which should be covered by the law.
2. The length of time goods may be carried under refrigeration for purposes of marketing before they are to be classed as "cold storage."
3. The definition of a cold storage warehouse.
4. The total length of time which goods may be held in cold storage.

There has been some inclination among the members of Congress to put all products which are carried under refrigeration into the category of cold storage goods. On the other hand, there has been considerable argument in favor of including in such classification only those goods which are highly perishable and must, of necessity, be carried under refrigeration during the ordinary period of marketing. The chief objection to including all goods is that many products, such as cheese, lard, dried fruits, etc., may or may not be carried under refrigeration. They are, at most, only semi-perishable, and probably more of such products are carried in ordinary dry storage than are held in cold storage. The result of including such products in a cold storage law would be to create an artificial distinction as between those which had been carried under refrigeration and those which had not; the former would have to be labeled "cold storage," and sold as such, while the latter would be free from the labor and expense, at least, of such marking, as well as the prejudice which, in some localities, still exists against the term "cold storage."

The second point, i.e., the marketing period, probably has been the subject of more discussion than the first. Many users of cold storage, particularly those who prepare their products in the producing centers for shipment to dis-

tant distributing points, maintain that a 30-day marketing period is none too long. In the case of small creameries or egg packing stations, it is frequently necessary to hold the product at producing points for several days until a carload is accumulated. Likewise, it is necessary to hold at the point of destination for several days pending the sale in the ordinary course and at both the point of production and destination the goods are carried under refrigeration. Manifestly, a marketing period during which the goods are exempt from the terms of a cold storage law is necessary, else all such products, commercially speaking, would be required to be labeled and sold as cold storage goods at all times.

These features of the so-called cold storage laws have been considered for a number of years. A conference committee of State and Federal food control officials prepared a uniform cold storage bill in 1914 and this bill was recommended for passage by the Uniform Laws Committee of the American Bar Association and by the association itself in 1915. This uniform bill limited the operation of the law to "fresh meat and fresh meat products and all fish, game, poultry, eggs and butter." It also defined a "cold storage warehouse" as a "place artificially cooled to or below a temperature above zero of 45 degrees F., in which articles of food are placed and held for 30 days or more."

### Cold Storage Laws in Twenty States

Approximately twenty States have passed cold storage laws closely following the uniform bill, as above mentioned, and, as many of the State laws have been in force for five or six years, and have proven workable, it would seem that they should form the basis for Federal legislation on the same subject, as uniformity is highly desirable in legislation of this sort.

The third point mentioned above has also been the subject for considerable discussion in Congress. None of the State laws include refrigerator cars in their definition of cold storage warehouses, and we think the tendency in Congress at the present time is to exclude them from the terms of the law, although H. R. 4786, by Congressman McLaughlin, includes a "car, vessel, or other vehicle, in which the temperature is artificially cooled to or artificially maintained at or below 45 degrees above zero," in the definition of a cold storage warehouse. There would seem to be little reason for including cars or other vehicles within the warehouse definition, because it stands to reason that no one would use such cars or vehicles for storage purposes.

The fourth point, i.e., the time of storage, is generally accepted as one year. This is for the reason that storage is a seasonable proposition and designed to take care of the surplus supply of perishable commodities during the season of production and preserve them for use during the season of non-production. Naturally, such a period should be from one season to another, and, consequently, a twelve months' period is logical. It has been argued with considerable force that power should be given the Secretary of Agriculture, or some such official, to extend this storage period, in his discretion, for good cause shown, as circumstances may arise which make further holding almost imperative.

H. R. 282 and S. 812, above referred to, do not vary widely from the uniform bill of the food commissioners and the American Bar Association in essential particulars, and, so far as the writer of this article is aware, are not likely to meet with serious opposition from the cold storage warehousemen and users of cold storage.



# Wholesalers Hold "Economy" Convention

## Three-Day Meeting in Chicago by National Association Develops Some Interesting Features

THE "Economy Convention" of the National Wholesale Grocers' Association, its fifteenth annual meeting, was held in Chicago on June 8, 9 and 10, with an attendance of about 400 from all States in the Union. With visitors, manufacturers, brokers, canners and retailers, the total attendance was close to 800. The association, in resolutions, affirmed its purpose in aiming to distribute foods more cheaply to the consumer; commended the work of the Federal Trade Commission against various forms of "commercial piracy;" condemned governmental interference with business; declared fixing of prices and profits by the Government as "Socialism hidden under a cloak;" deplored the multiplicity of laws and urged uniformity in State and Federal statutes; condemned "slack-filled" packages and favored the Haugen bill, which aims at this practice; urged further prosecution by the Government of the "raisin trust;" opposed special legislative favors for farmers; commended the efforts of its contracts committee to secure a favorable canning contract; declared the guarantee of prices against decline by manufacturers as "economically sound" and urged the Federal Trade Commission to withdraw its opposition to such guarantees; proposed legislation which would prevent the mixing of vegetables and animal fats in food products or otherwise prevent by law the extension of our supply of available and cheap foods; commended the research work of the National Canners' Association and recommended individual support of the work by wholesale and retail grocers; favored extension of the use of the metric system; urged the railroads to issue an interchangeable passenger mileage book at a reduced rate per mile.

J. W. Herscher, of Charleston, W. Va., was elected president; vice-presidents are B. B. Cushman, Detroit; O. J. Moore, Sioux City, Iowa; Austin L. Baker, Boston; John W. Morey, Denver, and B. D. Crane, of Arkansas. Sylvan L. Stix was re-elected treasurer and M. L. Toulme was re-elected secretary. J. W. Howells, Des Moines, Iowa; J. W. Dibble, Hillsdale, Mich.; J. H. Blackwell, Trenton, N. J., and George M. Patterson, Wilkesbarre, Pa., were added to the board of directors.

Appointments to the executive committee by President Herscher were as follows: P. C. Drescher, Sacramento, Cal.; Charles Feilbach, Toledo, Ohio; James Hewitt, Philadelphia; Samuel B. Steele, Chicago; Rollin A. Horr, Duluth, Minn.; H. S. Reynolds, Poughkeepsie, N. Y.; J. C. Lester, Kansas City; Roy L. Davidson, Indiana; Wiley Blair, Jr., Dallas, Texas.

## President Davies Discusses the Wholesaler's Problems

Arjay Davies, president of the association, delivered an excellent address, from which we quote in part as follows:

"Since the ending of the great war we have passed through several phases of a re-construction period. We are now emerging, I hope, from the final stage which has been characterized as the period of deflation and liquidation. The merchant who survives this period proves not only his commercial sagacity but proves beyond the shadow of a doubt that his business is grounded on a sound economic foundation. Here, too, we find our association recognizing this fact and doing everything possible to point the way to the right path. We have worked with the Harvard Bureau of Business Research, an organization of trained experts in this field, to obtain and disseminate the facts. We have enlisted the aid of this institution not to run our business but to help us find the petty leaks, the small items which go to swell the expense of our doing business and which might impede our advancement. Is this done merely to put money in our pockets, or is it done to combat elements that are hampering our business? Our sole desire is to find out how to sell food to the consumer at the lowest price considering the important service rendered. This is a highly important activity and merits some careful and thoughtful analysis and your enthusiastic support.

"We may rail and talk and shout and threaten; we may flatter or condemn other systems or other institutions, but the fact remains that we will be judged by our deeds and the results accomplished rather than by the quantity of words and sound produced. We are confronted with realities and not theories. Real work and real thought are the only solutions I can see.

"The present economic situation is a matter of first hand knowledge and bitter experience to most of us, so there is no need for the recapitulation of any facts on this subject, but we must pause for a moment to consider what, if any, are the future effects of these conditions on our own business. The merchant is an integral part of the economic structure and any weakness or irregularity is promptly reflected in his business and in that of our friends; the retailers. It is highly important for him to study

and appraise the forces which play such an important part in the country's welfare, and he who ignores them or disregards the signals of warning is not only a poor merchant but a poor citizen. What effect has immigration, the tariff, taxation, the railroads and other current problems on my business? We all know that they have an important bearing and must be considered in the analysis of business conditions and in our planning for future development and progress. Our association keeps you ever in touch with this important knowledge.

"The railroads today are in a perilous situation—perilous to themselves and perilous to the country. The carriers themselves recognize that their well-being does not lie in the exaction of prohibitive rates, yet the rates asked by them and granted by the government last year were in many instances prohibitive. Now we are quick to recognize that higher rates will not bring them the business but will serve to plunge the country still deeper into stagnation. They are now engaged in internal rehabilitation and reform. Their operating costs are too high, and until the pruning-knife is most vigorously applied, they cannot offer and render the country the service demanded.

### Put Own House in Order

"Our own house must be put in order. The wholesale grocer, like everyone else, has only a certain amount of energy, and his first problem is so to adapt his activities as to make that energy count as effectively as possible.

"One of his immediate problems is to determine whether that energy and time shall be spent in trying collectively or individually to compel greater trade discounts from manufacturers, or, on the other hand, in the attainment of better and more economical business methods and the accomplishment of greater efficiency within his own business, and also in the business methods of his retail customers.

"Let us consider first whether the manufacturer is in position to grant increased trade discounts for the mere asking. To assume this is to assume that the manufacturer is the final arbiter of his own price. Nothing could be further from the truth. The manufacturer must sell in competition with other manufacturers. He has to consider at least three



tremendously important elements of price that are beyond his control:

"First: The cost of his raw materials.

"Second: The cost of labor.

"Third: The demand, that is, the market prevailing at any particular time for his commodity.

"Of course, he may name whatever price he likes for the articles he has to sell, if the mere naming of that price gives him any particular satisfaction, but if it happens that the price named is higher than the public is willing to pay, he has named a paper price, and his factories must remain closed until the demand increases or until he sees the wisdom of naming a price that will sell the goods.

"To assume that the manufacturer can increase the trade discount to the wholesale grocer without increasing the manufacturer's price is to assume that the manufacturer is now enjoying an excessive profit, and also that he has no competition to meet, and finally that the demand for his product is controlled by himself and not by purchasers.

"Under these circumstances, it would seem clear that if a particular manufacturer is not in an economic or financial condition such that he can safely and willingly increase his trade discount, then such increase can be obtained only by persuasion, pressure or coercion from the trade to which he sells.

#### No Pressure on Manufacturer

"I trust there are no wholesale grocers that wish to bring any pressure upon any manufacturer or who believe that it would be fair to do so. I demand the right to run my own business and I very freely and cheerfully acknowledge and grant to the manufacturer the same right as regards his business. I have the most complete lack of faith in the permanency of any trade discounts or concessions of any kind in any branch of business that are wrung from a manufacturer or other merchant against his wish and against his better judgment. Moreover, it requires no lawyer to tell me that such action on the part of wholesale grocers generally or on the part of an association would be wholly illegal. The courts, in cases arising in various lines of trade, have pointed that out so frequently and so conclusively that no one really doubts it. And for my part, I can assure you that as a matter of good business, if the suggestion of any such coercion or so-called 'moral suasion' were made in the councils of the National Wholesale Grocers' Association, I would not be alone in fighting it to the last ditch and then some.

"But putting out of mind for the moment all thought of any legal questions involved, let us consider whether the wholesale grocer would be doing himself a good turn by requiring greater and still greater trade discounts from the manufacturer. You have all observed the increased growth of co-operative marketing plans among producers and chain stores and buying exchanges. I have discussed this on numerous occasions and in the greatest sincerity with many men in the wholesale grocery trade who are far more experienced than I, whose ability we all respect and whose very successful achievements in their own business speak for themselves. Again and again they have emphasized to me the point that to have trade discounts or the spread between manufacturer and retailer always increased is, beyond question, to hand a considerable part of our business over to the chain store and other competitors on a silver platter with gold trimmings. We should be our own greatest enemies; we should be business suicides to do it.

"But how, then, can the wholesale grocer most effectively use those energies, ability and time that he has and that he is expected to turn to some good account during his business career?

#### Better Service Recommended

"Obviously, by accomplishing incurred economies within his own business, by serving better and better every year, by making himself always a more efficient, and therefore, more dangerous competitor of the buying exchange, the co-operative plans and the chain stores. Now and then it has been my lot to meet a wholesale grocer who believes he

has accomplished the last economy he can in his own business, has reached the peak of service to his retail customers and has no possible means of increasing his income except by wringing a greater profit from the manufacturer. Well, all we need to say about that particular wholesale grocer is that when a man in any other walk of life, whether he be a doctor, engineer, producer, manufacturer, mill owner, or what-not, reaches the point that he believes no further improvement is possible in his own business and that he has attained the perfection of economy and efficiency, then we say he is affected with a disease and is the easiest possible prey of his hard-working, self-critical and progressive competitors. Then the family mourns and his friends send flowers.

"Of course, I need not take your time to remind you—what we think of the man who fancies he has attained moral and intellectual perfection and there is nothing more to learn.

"Therefore, if wholesale grocers and associations in the wholesale grocery trade are to build on firm foundations and to be of real service to the trade and to the country, they must tirelessly study to improve methods of business, to discover and install new economics and to be every year better and more keenly trained and effective merchants and servants of the manufacturer and of the retailer and of the public than they were the year before.

And finally, we must assist the retail grocer in carrying forward these educational methods. The wide-awake, industrious, progressive, individual retailer has not now and never has had real difficulty in competing with the chain store or with his other rivals. Our second big job is to make more retailers more like this wide-awake, successful, progressive merchant. All of you have one or more such customers on your books and you have no more important work before you than to see that your other customers, with your aid and co-operation, and with the benefit of your experience, become more like him.

"Before concluding I should like, with your indulgence, to draw to your attention some matters that have received unusual publicity recently. You will recall some comments from official and semi-official sources within the government, made not long ago in connection with trade association activities, especially with relation to the so-called 'open price competition' system of acquainting various merchants concerning prices, statistics and other business factors, and it may not be amiss for me here to recount our position on this subject and the policies which guide our work. This organization was formed to foster the development of our trade and to promote a spirit of friendliness among ourselves and among those with whom we do business. It is a purely voluntary and independent association of wholesale grocers formed to carry out the objects and policies recited in our organic law—the Constitution and By-Laws. One of the objects, as I recall my catechism, reads:

Provided, that in the efforts of the Association to accomplish these ends, no action shall be taken that will tend in any manner whatsoever to fix or regulate prices or in any way operate in restraint of trade.

#### No Dictation by Association

"This is observed strictly and to the letter. There is not now as there never has been since its inception, any desire or intent, on the part of the association, to dictate the policies of anyone, either in or out of the trade. Manufacturers are free to sell and dealers are free to buy from the source their best business judgment and experience determines. There is no intimation or suggestion of any kind, or in any guise, concerning prices. We collect no statistics and publish none with respect to the prices at which to buy or sell our commodities. The words 'pressure' and 'coercion' are absolutely foreign and unknown to us in the conduct of our work. We have no open price bureau nor any activities having to do with prices directly or indirectly.

"We firmly and honestly believe that the wholesale grocer is the most economical and efficient medium for the distri-



bution of food now known to us. The justification for our belief may be found in the size and importance of the industry. Any effort to dispense with this service, or any effort tending toward the creation of some other system must meet these tests, and as soon as such a system is devised and perfected we must gracefully step aside and acknowledge defeat.

"In our organization, then, we have an aggregation of independent merchants, neither bound nor hampered by any by-law or expressed or implied restriction in their competition with each other and in their dealings with producers and retailers, each actively engaged in competition with the other with the sole object of placing before the consumer the necessities of life at the lowest possible cost.

## Legislative Committee Reports on Bill Enacted and Pending

With more than forty State Legislatures in session, plus a special session of Congress, the legislative halls of the United States have been more than busy during the past few months. According to the report of the Pure Food and Legislative Committee, of which Fred R. Drake is chairman, the total number of bills pending in Congress and in State Legislatures was more than 80,000. A fair share of these had to do with food products.

Many of the bills affecting food products which were introduced at the 66th Congress failed of enactment, but most of these have again been presented to the 67th Congress and the principal measures proposed are on the following subjects:

Slack-filled packages.

Cold storage foods.

Establishing standard weights for flour, hominy, grits and meals.

Creating Federal livestock commissioner.

Metric system of weights and measures.

Authorizing organizations and associations of producers of agricultural products.

Commercial bribery.

Tariff.

Revenue sales tax.

A statement of the laws passed and pending in the Legislatures of the various States was prepared by the committee and is as follows:

### ARIZONA

No laws vitally affecting the interests of wholesale grocers were enacted.

### ARKANSAS

A new law relating to the manufacture and sale of vinegar was enacted.

Bills were introduced on the following subjects but failed of passage: Prohibiting the manufacture and sale of misbranded foods and drugs; requiring medicines and compounds to be marked with cost of production.

### CALIFORNIA

A new statute gives the Director of Agriculture power to establish standards for fruits and vegetables.

New laws relate to the branding of bread and apples.

Bills were introduced on the following subjects, but failed of passage: Cold storage; trading stamps; artificial coloring in food; price branding of foodstuffs; imitation milk; sanitation; beverages.

### COLORADO

An amendment to existing law relating to the sanitary requirements for food products was enacted.

A law was enacted relating to the standard for cheese and the labeling thereof.

A law was passed relating to the sale and inspection of dairy products.

Bills were introduced on the following subjects, but failed of passage: Prohibiting unreasonable profits on food, fuel and clothing; regulating the sale of imitation milk products and the licensing thereof; creating the office of market director; amending the pharmacy law with relation to the sale of patent medicines by merchants; creating a division of food and drugs in the State Board of Health; prohibition; establishing a division of marketing and empowering the director thereof to establish standards for farm products including authority to require the name and address of the manufacturer to appear on containers; relating to standard grades and packages for fresh fruits and vegetables; licensing food dealers; amending existing law with relation to the sanitation of food factories.

It is our aim to present to these independent and competitive merchants facts of an educational nature which serve to elevate the standards of business ethics, the correction or elimination of unfair and prejudicial methods of doing business, and the advocacy of uniform legislation, commercial and food control, which tend to simplify the conduct of business and serve to protect the public against fraud and unwholesome products. Every activity in which we are engaged is measured by a dual standard—benefit to the public and benefit to the trade. Let us again, in annual convention, consecrate our efforts to the accomplishment of these ends and to perpetuate the splendid achievements of those who have gone before, so that their sacrifices and their unselfish labor in our behalf may not be in vain."

### CONNECTICUT

At the time of going to press the legislature was still in session:

Bills were introduced on the following subjects: Prohibition; licensing the sale of soft drinks; creating a commission with power to regulate prices of certain necessities; prohibiting the use of saccharine in beverages; requiring the manufacturer's name to be branded on oleomargarine.

### DELAWARE

Although the legislature had adjourned at the time of our going to press, final action was not available on several bills.

An amendment to existing law was enacted with relation to the standard basket for certain commodities.

The following bills passed both houses of the legislature and were awaiting action by the Governor:

A bill creating a bureau of markets and marketing, and authorizing the establishment of grades, etc., for certain products.

A bill prohibiting the adulteration and misbranding of foods.

Bills were introduced on the following subjects, but failed of passage: Creating the position of State food inspector to enforce the State food laws and to make inspections; a bill abolishing the position of cannery inspector and conferring the duties of that office upon the food inspector; a bill prohibiting the adulteration and misbranding of all soft drinks.

### FLORIDA

At the time of going to press the legislature was still in session.

Bills were introduced on the following subjects: Markets; prohibiting the manufacture and sale of bleached and self-raising flour; licensing those who handle carbonated beverages; prohibiting the use of saccharine; requiring retailers to brand merchandise with the cost price.

### GEORGIA

The legislature will convene in regular session on June 22d.

### IDAHO

A new law relates to the branding of cold storage eggs.

A sanitation measure affecting food storage establishments became law.

A new statute relates to imitation dairy products.

Bills were introduced on the following subjects, but failed of enactment: Requiring cold storage butter to be branded with date when stored; making it unlawful to employ persons to handle food unless they possess physician's certificates; requiring food in package form to be branded with statement of weight or measure but defining the words "in package form" so as to include both the wholesale and retail packages; establishing standards for milk and ice cream; limiting wholesalers' and retailers' profits, defining "cost" and requiring the cost to be branded on merchandise.

### ILLINOIS

The legislature is still in session.

Bills are pending on the following subjects: Prohibiting the use of wood alcohol in any food, drink, toilet or medicinal preparations; amendment to existing law changing the standard for ice cream; relating to apple grading and requiring branding of closed packages with name of packer; amending existing cold storage law; relating to the licensing of users of trading stamps and certificates; requiring dealers in patent and proprietary medicines to secure permits; prohibition; regulating the sale of bread and the labeling thereof with the name of the manufacturer and a statement showing the net weight; creating a bureau of markets to collect and report statistics regarding the production of foodstuffs; licensing the manufacture and sale of soft drinks; amending the title of the existing cold storage law; relating to weights and measures.

### INDIANA

An amendment to existing law was enacted relating to the sale of beverages containing alcohol.

Bills were introduced on the following subjects, but failed of passage: Restricting the sale of medicinal preparations; authorizing the use of benzoate of soda as a food preservative; weights and measures; containers for fruits and vegetables; regulating traffic in eggs; and regulating the manufacture and sale of alcoholic beverages.



## IOWA

No laws vitally affecting the interests of wholesale grocers were enacted.

Bills were introduced on the following subjects, but failed of passage: Creating an industrial court and declaring food to be a public utility; creating a state board of agriculture; giving a board of examiners broad powers in connection with the manufacture and sale of flavoring extracts.

## KANSAS

No laws vitally affecting the interests of wholesale grocers were enacted.

Bills were introduced on the following subjects, but failed of passage: Markets; the sale of eggs; bushel weights of various commodities.

## MAINE

A new law requires the registration of milk dealers.

The prohibition law was amended.

An amendment to existing law authorizes the Commissioner of Agriculture to certify to the quality and condition of fruits, vegetables, dairy and other perishable farm products.

The food law was amended in relation to the sale of clams, oysters and scallops not complying with the standards.

An amendment to the food control law was enacted.

A new law in relation to the wrapping of bread was passed.

Bills were introduced on the following subjects, but failed of passage: Cold storage; regulating the taking and canning of clams; regulating the sale of ice cream substitutes; the sale of standardized milk; proposing to adopt the Federal prohibition regulations.

## MASSACHUSETTS

At the time of going to press, the Massachusetts Legislature was still in session.

The following new laws were enacted:

A law for authorizing investigation for the purpose of revising bushel weights for certain commodities.

A law establishing a standard box for farm produce at wholesale.

A law regulating the manufacture and bottling of soft drinks;

A law relating to the Special Commission on the Necessaries of Life.

A law relating to the sale of bakery products at retail.

Bills were introduced on the following subjects, but failed of passage: Defining Jamaica ginger as an intoxicating liquor; regulating the sale of medicinal preparations; relating to the sale of milk powder or powdered milk; an amendment to the cold storage law; amending the law relating to apple grading; licensing the sale of soft drinks; regulating prices charged for food by wholesalers and retailers; creating a State Commission to control the production, price and sale of milk; relating to an excise tax on sales at retail; requiring all package foods to bear a label showing date of packing.

Bills were pending on the following subjects:

Regulating the sale of certain articles in standard containers;

A prohibition measure containing exemption for flavoring extracts similar to that in the Federal law.

## MICHIGAN

A new law requires manufacturers and sellers of flavoring extracts and medicinal preparations to secure permits.

An amendment to existing law relating to apple grading was enacted.

The prohibition law was amended.

A bill amending the weight branding provisions of the law, requiring wrapped hams and bacon to be branded with a statement showing the net weight, was introduced but failed of passage.

## MINNESOTA

An amendment was passed to existing law relating to standard bushel weights of certain food commodities.

A new law was enacted regulating the manufacture and sale of soft drinks.

A law codifying the food laws of the State was enacted.

An amendment to existing cold storage law was added.

The prohibition law was amended by the addition of certain provisions with relation to the sale of flavoring extracts.

Another new law enacted would give cities, towns and boroughs power to make rules and regulations defining intoxicating liquor.

Bills on the following subjects were introduced, but failed of passage: Amending the agricultural law with relation to commission merchants; requiring all persons acting as warehousemen of food to report to the Commissioner of Agriculture monthly the quantity of their holdings; regulating the production, transportation and sale of milk and milk products; amending the cold storage law; regulating prices; regulating the manufacture and sale of milk compounds and requiring certain branding; prohibiting the manufacture of foodstuffs in cellars and basements; licensing use of trading stamps and coupons; prohibiting the use of butter fat in the manufacture of oleomargarine; regulating the manufacture and sale of medicinal preparations and extracts and limiting the alcoholic content of such preparations to ten per cent; prohibiting the use of the word "butter" in advertisements or labels for oleomargarine; requiring merchandise to be labeled to show cost to manufacturer, price at which sold by the manufacturer and the names and addresses

those purchasing or selling such merchandise; limiting the profits on necessities of life; prohibiting advertising matter or directions inside of food packages or cartons; amending existing law with relation to gift enterprises; taxing wholesale and retail grocers; prohibiting the sale of patent and proprietary medicines except by druggists

## MISSOURI

No laws vitally affecting the interests of wholesale grocers were enacted.

Bills were introduced on the following subjects but failed of passage: Commercial bribery; market; proprietary medicines; licensing use of trading stamps, also sale of chewing gum and cosmetics; prescribing rate of profit to be taken in the sale of foods.

## MONTANA

A new law relates to the manufacture of soft drinks.

The use of saccharine in food is prohibited under a statute enacted during the session.

## SPECIAL SESSION

During a special session, held immediately after adjournment of the regular session, a prohibition enforcement law, similar to the federal statute, was enacted.

## NEBRASKA

A new statute regulates the manufacture and sale of bread.

Another law regulates the manufacture and sale of beverages.

A virtual codification of the weights and measures laws was enacted.

An amendment to the food law changes the standards for ice cream.

The food and drug law was amended.

Bills were introduced on the following subjects, but failed of passage: Trading stamps; standard weights for rye and corn flour; cold storage; registration of bakeries and food establishments.

## NEVADA

A prohibition law was enacted.

Bills were introduced on the following subjects, but failed of passage: Requiring name of manufacturers to be branded on imitation milk products; limiting the rate of profit which may be taken in the sale of merchandise.

## NEW HAMPSHIRE

An amendment to the prohibition law was enacted.

A law was passed regulating the practice of pharmacy and the sale of medicinal preparations.

A law relating to standards for milk, cream and butter was passed.

Bills were introduced on the following subjects, but failed of passage: Relating to the use of the State seal and flag; advertising of medicinal preparations; regulating the manufacture and sale of beverages.

## NEW JERSEY

Chapter 83 gives the Department of Agriculture power to establish standards for farm products, which are so defined as to include products manufactured from farm products.

Chapters 103 and 150 are prohibition enforcement laws.

Chapter 71 makes it unlawful to remove or eradicate the date showing when an article has been placed in cold storage.

Chapter 298 requires dealers selling both kosher and non-kosher food to indicate that fact in advertisements and on signs.

Chapters 93 and 95 amend the penalty provisions of the weights and measures laws.

Chapter 162 makes it unlawful, in canning tomatoes, to add any liquid except the juice of the tomato, after peeling, trimming, coring and preparing.

Bills were introduced on the following subjects, but failed of passage: Establishing standards for condensed milk and prohibiting the sale of milk compounds containing fats other than milk fats; establishing standards for ice cream; prohibiting combination sales; prohibiting the sale of inflammable stove polish; giving local officers power to determine what is a reasonable price paid for a commodity.

## NEW MEXICO

A new law relates to the sale of household remedies by general merchants.

A prohibition enforcement bill was introduced but failed of passage.

## NEW YORK

Chapter 155 is a prohibition enforcement statute which contains exemptions for flavoring extracts and proprietary medicines similar to those in the Federal enforcement law.

Chapter 50, a recodification of the Labor Law, contains provisions concerning sanitation in food establishments.

Chapter 14 amends the arbitration law of 1920.

Chapter 557 amends the Cold Storage Law of 1920 in relation to temporary storage.

Chapter 475 amends the Farms and Markets Law in relation to the administration of that statute.

Bills were introduced on the following subjects but failed of passage: Creating a Cost of Living Commission; creating a State Trade Commission; authorizing the Governor, in time of emergency, to seize and conduct food-producing and distributing plants; creating a State Milk Commission; requiring packer's name to be branded on containers of peaches; relating to seizure and sale of perishable food; vinegar; requiring net of weight branding on containers; prohibiting the manufacture



and sale of milk compounds containing fats other than milk fats; prohibiting sale of household remedies by New York City merchants; taxing certain beverages.

#### NORTH CAROLINA

A new law was enacted requiring corn meal, hominy, grits and flour to be sold in packages of certain weights and requiring the name of the maker or jobber to appear on the label.

#### NORTH DAKOTA

A prohibition enforcement law similar to the federal statute was enacted.

Bills were introduced on the following subjects, but failed of enactment: Relating to the sale of household remedies; giving the Board of Health power to condemn and destroy unwholesome food.

#### OHIO

At the time of going to press, the legislature was still in session. The following new laws were enacted:

Existing law relating to the registration of containers was amended.

A new law was enacted prohibiting the sale of food products falsely represented as kosher.

Bills on the following subjects were pending: Relating to prohibition; standards for cream; standard weights for bread and requiring branding with the name of the manufacturer; amending law relating to bushel weights for farm products; manufacture of liquor for non-beverage purpose; licensing the manufacture and sale of soft drinks; standards for oysters.

#### OKLAHOMA

No laws vitally affecting the interests of wholesale grocers were enacted.

Bills were introduced on the following subjects, but failed of passage: Limiting profits which may be taken in the sale of foods; relating to physical examination of food handlers; establishing a fair price commission with power to fix prices; creating a state trade commission; making it necessary to secure a permit in order to sell flavoring extracts; limiting percentage of alcohol in flavoring extracts; requiring flour to be branded with name of manufacturer and place where manufactured.

#### OREGON

Under a new statute imitation dairy products are required to be branded with the word "imitation."

Foreign eggs are required to be branded as such by the terms of a law just enacted.

A new statute permits the sale of household remedies by general merchants.

A new law requires imitation milk to be branded with a statement of the ingredients.

#### PENNSYLVANIA

Although the legislature had adjourned before this report went to press, final action was not available on a number of bills.

The following laws were enacted during the session of the legislature:

A new law creating standards for butter;

A new law relating to weighing and measuring devices;

An amendment to the weights and measures law;

An amendment to existing law relating to standard weights for farm products.

A new law relating to prohibition; the sale of flavoring extracts is exempted.

A new law relates to the labeling of oleomargarine and butterine.

A statute enacted relates to the sanitary conditions of bottling establishments and ingredients for soft drinks.

Bills were introduced on the following subjects, but failed of passage: Sanitation of food establishments; licensing the sale of tobacco products; licensing trading stamps and premium certificates; regulating the sale of caustic acid or alkali preparations for household use; prohibition; regulating the manufacture and sale of condensed, evaporated and skimmed milk and prohibiting the sale of milk compounds; fixing standard weights for bread; amending the Commodities Act; licensing the premises of bottlers of soft drinks; requiring registration by food handlers in cities of the first class; prohibiting the giving of stamps, coupons or similar devices.

#### RHODE ISLAND

No laws vitally affecting the interests of wholesale grocers were enacted.

#### SOUTH CAROLINA

A law was enacted authorizing the Division of Markets of the extension service to establish standard containers, grades and labels for fresh fruits and vegetables.

Bills were introduced on the following subjects, but failed of passage: Prohibition; weights and measures; relating to the sale of medicinal preparations and flavoring extracts; creating standard weights for flour, hominy, grits and meals.

#### SOUTH DAKOTA

A new law was enacted fixing standard weights for bread and requiring it to be branded with the name of the baker or manufacturer.

A statute relates to sanitary conditions in food establishments.

A statute relates to flavoring extracts and medicines.

#### TENNESSEE

A new law requires dry commodities to be sold by weight.

Bills were introduced on the following subjects, but failed of passage: Establishing a market bureau; requiring branding of packer's name on fruits and vegetables; amending the law establishing standard packages for corn meal by requiring a statement of the net weight on such packages.

#### TEXAS

A law was enacted abolishing the office of Dairy and Food Commissioner; conferring all powers of that office on State Health officer.

A law was enacted relating to the weights of bread.

Bills were introduced on the following subjects, but failed of passage: Relating to the sale of medicinal preparations by merchants; regulating the sale of ice cream and creating standards therefor; relating to bushel weights of dried peanuts and pecans.

#### UTAH

A statute was enacted relating to the licensing of egg dealers.

A new law requires the branding of the name of the manufacturer on imitation milk.

It is provided in a new act that it shall be unlawful to represent any article as having been produced or manufactured within the state when in fact such article has been produced or manufactured elsewhere.

Bills were introduced on the following subjects, but failed of passage: Requiring imported canned meats to bear the date of importation; establishing a standard for condensed milk and requiring containers to be branded with the manufacturer's name.

#### VERMONT

An amendment to existing law was enacted relating to the sale of diluted or adulterated milk or cream.

The law relating to bushel weights for various foods was immaterially amended.

The statute relating to the grading of apples and containers therefor was amended.

A new law was passed relating to prohibition; flavoring extracts are exempted in the same manner as in the federal law. Permits are required to be filed with the Secretary of State.

#### WASHINGTON

No laws vitally affecting the interests of wholesale grocers were enacted.

Bills were introduced on the following subjects, but failed of passage: Requiring condensed and evaporated milk to be made of pure milk or skimmed milk; requiring cold storage foods to be branded with dates of entry, and withdrawal from storage; sanitation; requiring imitation milk products to be branded with date of invoice, name of distributor and other information.

#### WEST VIRGINIA

Existing law relating to licensing was amended.

An amendment to the prohibition statute was enacted.

Bills were introduced on the following subjects, but failed of passage: Fraudulent advertising; limiting profits on necessities of life; regulating sizes of type in certain contracts; abolishing the State Department of Agriculture.

#### WISCONSIN

At the time of going to press the legislature was still in session.

Bills were introduced on the following subjects: Restricting sale of flavoring extracts; limiting cold storage period to six instead of twelve months; creating a Department of Markets to be vested with broad powers affecting the manufacture and distribution of food; giving cities authority to purchase and sell food; levying a tax on manufacturers, wholesalers and retailers of milk compounds containing fats other than milk fats; requiring artificially bleached flour to be branded with the word "bleached"; prohibiting the manufacture and sale of milk products containing fats other than milk fats.

#### WYOMING

A new law gives the Dairy, Food and Oil Commissioner power to close any food-producing or distributing establishment which, in the commissioner's opinion, is an unsanitary condition.

A prohibition enforcement statute similar to the federal law was enacted.

Standards were established for condensed and evaporated milk under the terms of a new statute.

A new statute requires commodities sold on basis of weight to be sold by net weight.



## Report on Cases Before Federal Trade Commission

The Federal Trade Commission Committee, of which Oscar B. McGlasson is chairman, submitted the following report:

No business is more important or more necessary than that of producing, manufacturing and distributing foods for mankind. There are over 4,000 wholesale grocers in the United States engaged in this essential industry of buying and bringing foods from all parts of the world to feed the people. Many hundreds of millions of dollars are required to carry on this great business. Several hundred thousand people are engaged in this task and the average toll taken for this service and capital invested is about 2 per cent on the sales.

The wholesale grocer realizes that he is dealing in the necessities of life and that they must be sold on a close margin of profit, and in the most efficient and economical way possible. Ninety-nine wholesale grocers out of a hundred believe that there is an honor in business that reckons with all justly, that regards fairness and kindness more highly than goods or prices or profits. On this high plane or platform is this business conducted. When the Government, during the war, placed the wholesale grocer under a license system and virtually took over the business through regulation, all cheerfully consented, although it meant a big financial loss, because they were doing their "bit" in winning the war.

Food items were sold without regard to cost of replacement—a plan that could but bring ruin if carried out for any great length of time. As an example, they were compelled to sell sugar for \$10.00 a bag, although it would cost them \$20.00 a bag to buy sugar. This, of course, is contrary to all common sense and would spell ruin to any business, and that is the reason why so many wholesale grocers have had to suffer a loss on sugar.

Many of them bought just enough sugar to take care of their trade, paying as high as 27c per pound and were compelled to sell this sugar at 10c per pound. This loss could have been taken care of if they had been allowed to sell their cheap sugar based on cost of replacing same, but now many of them have taken some very serious losses, not only on sugar but on many other items that have declined in value.

Losses and shrinkage have taken all profits earned in the past years and in some instances eaten into the capital, but by good judgment, practicing economy and preventing waste, the industry will in a few years, recover these losses.

A year ago the grocers of America were congratulating themselves upon the satisfactory results which the first six months of 1920 had given them. In July of 1920 came the unprecedented decline in values of merchandise, and the wholesale grocer found that his concern was just about where it was ten years ago. It has required careful application to readjust affairs in accordance with business conditions all over the country. Much advice has been given by those who claim to have a cure, and many of the leaders in the trade have been willing to aid, with scientific suggestions of bureau research work, which has brought about a kind of a disease, manifested by a superabundance of words with an inverse lack of ideas. The fact is, if a business is to be placed right, it must be done on a home cure remedy. It is up to the management of each concern to clean house and readjust matters in accordance with requirements of his own particular business. The banks will give you an opportunity, but the problem is one you must solve.

The world is full of joys, successes, failures and sorrows and no one pays attention to you. Believe in yourself and you cannot fail, as it is largely in the state of mind and the application of the belief that you cannot fail that will bring success. One must work out his own salvation, socially, mentally, physically, morally and in a business way by applying common sense—just good common ordinary horse sense in the management of your affairs. The future looks

bright for the business that has been properly readjusted. Washington is undoubtedly going to give the country a business administration. President Harding, in his message, assures us that he believes there should be "less government in business and more business in government," and with a Cabinet of such men as he has selected, the business interests can feel safe and know that the future has only good in it for the business safely conducted.

### The Three Fair Ways

In our last three or four reports, we have called attention to what we designate as the three fair ways of merchandising. The ethical ways. The three square ways.

First: By selling direct to jobbers.

Second: By selling direct to retailers.

Third: By selling direct to consumers.

Any distributor who will select either one of the three fair ways of merchandising, and adhere to same, will be conducting business in an ethical way and will not be guilty of unfair competition as it seems to us. The manufacturer, who considers it better and more economical to distribute his products **direct to the consumer**, thereby cutting out the jobber and the retailer, is perfectly within his rights, and if it is shown that the service rendered by the jobber and the retailer is not economically the best and cheapest, then these two links in the chain of distribution should be done away with. But the manufacturer who selects such a course should be **compelled** by the Federal Trade Commission to have **all** his goods travel in that channel.

The manufacturer who believes that it is better and cheaper to distribute his commodities through the retail grocer, is perfectly within his rights, and if it is shown that the jobber is not an economic and necessary link, then the jobber should go. But in order to prevent unfair competition, that manufacturer should be compelled by the Government to have all of his goods travel in that channel, viz., through the retail grocer.

If, however, the manufacturer believes, as 99 per cent of them do, that the wholesale grocer is the better and more economical way of distributing his products, then he should be compelled by the Government to have all of his goods move through this channel. The practice which is now in vogue whereby the manufacturer distributes 90 per cent of his goods through the wholesale grocer and 10 per cent direct to the large retailers, brings about unfair competition, and is unethical and unfair, not only to the jobber, but especially to the many thousands of retailers. Your committee believes that the Federal Trade Commission should be convinced that this unfair practice, which brings about this unfair competition is creating a monopoly and should be stopped, and has repeatedly urged that some kind of action in the way of a complaint be filed.

Your committee has been active in attending hearings before the Federal Trade Commission, on complaints filed by your counsel during the year, not only in Washington, but as well before a branch of the Commission in Chicago. Good results, in many instances, have been obtained and orders have been entered wherein the defendants have been ordered to "cease and desist."

### Meat Packing Industry

Now that the five big meat packers have been eliminated by the United States Government from the wholesale grocery business, and the menace of a monopoly, which so many feared, has been destroyed, there will be more competitive conditions, and food prices will decline to the basis of supply and demand.

### Commissary Departments

We again call your attention to the unfair practice on the part of some large manufacturing concerns of maintaining commissary departments, where employees can obtain groceries at wholesale, being the price the concern pays for them. This is glaringly unfair to retailers of the community and should in our opinion receive the attention of the Federal Trade Commission by proper complaint.



### Cumulation Discounts

The Commission has given considerable time to investigating concerns who distribute well known food items and rebate to large retailers, thereby putting the small retailer at a great disadvantage. One unit of chain store is given this advantage by the parent store which receives the quantity discounts over the small individually owned store, its direct competitor.

We would call to your attention some of the complaints and have given you a resume of the grounds of complaints, results obtained and present status of complaints now pending.

### Wholesale Grocers of Atlanta, Georgia

Complaint issued against certain wholesale grocers of Atlanta, charging them with unfair methods of competition in having combined and conspired together to prevent certain competitors from obtaining goods from manufacturers and other sources; boycotting and threatening to boycott certain manufacturers for selling to such competitors. Case still pending.

### Wholesale Grocers' Association of El Paso, Texas

Complaint charged unfair methods of competition in having combined and conspired to prevent a competitor from obtaining goods from manufacturers; by threatening boycott and withdrawal of patronage and inducing manufacturers to refuse to sell such competitor at wholesale prices and terms.

Order to cease and desist issued by Commission on November 9, 1920. Petition for review of Commission's order filed with Circuit Court of Appeals, Fifth Circuit on January 6, 1921, in behalf of certain respondents.

### Iowa—Nebraska—Minnesota Wholesale Grocers

Complaint filed against Iowa-Nebraska-Minnesota Wholesale Grocers' Association, its officers and members, charging that its membership practices unfair methods of competition in the adoption of a plan of boycott and withdrawal of patronage to prevent manufacturers from dealing with competitor firms who are not members. Case still pending.

### Wholesale Grocers of Cairo, Illinois

Complaint against certain wholesale grocers of Cairo, Ill., charging unfair methods of competition and the existence of a conspiracy to hamper and obstruct a competitor; coercing manufacturers from recognizing a certain competitor as a jobber entitled to buy at jobbers' prices and on jobbers' terms. Ordered to cease and desist on September 28, 1920.

### Raymond Brothers-Clarke Company

Complaint filed against Raymond Brothers-Clarke Co. of Lincoln, Nebraska, charging them with the use of unfair methods of competition, in that they sought to coerce the T. A. Snider Preserve Co. to refuse recognition to a competitor of the respondent as a jobber and entitled to jobbers' prices, thus cutting off the supplies of such competitor. Order to cease and desist entered February 23, 1921.

Appeal filed to the Circuit Court of Appeals of the Eighth Circuit.

### Big Four Grocery

Combination sales. Complaint issued against the Big Four Grocery Co. charging it with unfair methods of competition in the use of false and misleading advertising concerning certain combination sales of groceries. Order to cease and desist; also directed to cease using false and misleading advertisements concerning the prices of competitors. Order to cease and desist entered March 30, 1921.

### Trade Practices in the Package Macaroni Industry

The so-called Trade Practice Submittal is steadily gaining favor. This submittal amounts to an open hearing before the Federal Trade Commission, conducted upon the invitation of the Commission and for the purpose of affording any particular branch of the trade an opportunity to bring to the attention of the Commission practices on the one hand that it deems fair and sound in that industry, and on the other hand practices that are considered harmful to the trade. Recently there was trade submittal in the package macaroni industry. The questions submitted by

the Commission for discussion during this inquiry related to:

- (a) Slack-filled packages;
- (b) Subsidizing jobbers salesmen;
- (c) Minimum weight packages;
- (d) False and misleading labels;
- (e) Premiums to the trade.

Everyone in the trade has had an opportunity to send in to the Commission his views upon these subjects. These have been digested and considered by the Commission's experts. The replies received by the Commission revealed that the industry is overwhelmingly committed against the practices above mentioned. In the consideration of any future complaints respecting these matters in this trade, the sentiments expressed will have great weight.

### Guarantee Against Decline

An extensive inquiry was conducted by the Commission into the custom of guarantees against declines in price. Many branches of the trade of the country were represented at the hearings conducted at Washington. The association took an active part in ascertaining the attitude of its membership on this subject and appeared at hearings, by its counsel, the chairman of your Committee, and one of its members, Mr. O. J. Moore, and urged the Commission to express no opinion either for or against the practice, but to judge each individual case on its merits and facts involved. The Commission virtually adopted the stand favored by the association and announced that it would not express either approval or disapproval of the economic soundness of the arguments advanced before it for or against the practice. Each case will be considered upon its own facts.

### Court Decisions

An interesting decision was recently rendered by the United States Circuit Court of Appeals, Second Circuit, in the case entitled Winstead Hosiery Co. vs. Federal Trade Commission. The Commission had directed the company to refrain from using misleading descriptions on goods marketed by it. The products were designated as "Merino," "Wool" and "Australian Wool," but it was ascertained that the products of fabrics were not all wool. The petitioners claimed that the practice was followed according to trade custom of long standing and was well known to and recognized by distributors. The Court held that the Commission had no authority to censor the labels of manufacturers or dealers where there was no unfair method of competition as against other manufacturers of underwear and where the labels were thoroughly understood and established in the trade. The Court further held that assuming that some consumers might have been misled due to their lack of understanding of the labels or due to deception by some dealers, these results did not establish the kind of unfair competition that falls within the jurisdiction of the Commission.

A decision affecting trade association activities was handed down by the United States Circuit Court of Appeals of the Sixth Circuit, in the case of the National Harness Manufacturers' Association of the United States vs. Federal Trade Commission, et. als. One of the objections interposed by the petitioner was that it was not properly before the Commission because it was a voluntary association without capital stock and not engaged in business. The court held the act would not permit individuals, partnerships and associations in combining to use unfair methods of competition merely because they used as a medium a voluntary, unincorporated association without capital and not itself engaged in business. The association may be brought into court by service on its officers and members, personally and individually. Even though the association is not engaged in business or commerce, many of the members are so engaged, and interstate commerce is alleged to be affected by unfair methods of competition. The remainder of the Courts decision affirms the Commission's findings of fact with respect to the unfair methods of competition employed in coercing or inducing certain manufacturers to refuse recognition to certain classes of merchants.



## Use of More Substantial Containers Advocated

The Containers Committee reported that it had been active in advocating the use of more substantial containers. A questionnaire was recently sent out by the committee in which two questions were asked:

First, What troubles are grocers having with containers?

Second, Are fibre containers satisfactory for canned goods?

From the answers received to question "first," the following points are important:

The lightness of many wooden boxes.

Improper mailing of boxes.

Inability to stack fiber containers of light merchandise.

Sweating and rusting of cans in fiber containers.

Refusal of the railroads to accept second hand or used fiber containers for reshipping.

Inability to examine canned goods for spoils and maintain strength of fiber container for shipping.

As to question "second" 65 per cent of the total answers did not favor fiber containers for canned foods. Thirty-five per cent of the total answers favored fiber containers for canned foods. Five per cent had no preference.

The committee then stated that "because of necessity the fiber container is here to stay" and suggested that efforts be made to obtain better made and stronger containers. It was estimated that a daily loss of \$500,000 occurs to shippers and manufacturers due to poor packing and improperly designed containers.

The importance of proper car loading was emphasized, and a certificate of car loading, which has been published in a recent issue of *The American Food Journal*, was presented as a proper form to use.

### Report on Canned Goods Contract

The report of the Contracts' Committee was in part as follows:

"Wholesale grocers have been, for the past four years, accepting sellers' contracts without any particular objections to conditions, terms, and other elements. Lately we have been making strenuous efforts to work along the lines of preparing an equitable contract not in favor of the buyer but equally fair to both parties interested.

"We did have hopes when your chairman was attending the National Canners' Convention at Atlantic City that we would be able to arrive at a canned goods contract, but owing to, as we understand it, objections of the counsel of the National Canners' Association, nothing was accomplished.

"This compelled us, as a starting point, to draft a form of contract which has been sent to members for their information and guidance. This form is the result of considerable labor and study on the part of your Committee and embodies the best business judgment and experience of ourselves and other members.

"It is our genuine belief that it is a practical, fair and just document, which will result in the adoption of a form satisfactory to both the National Canners' Association and the National Wholesale Grocers' Association.

"We feel that California and the far western points are entitled to a contract covering more points than a contract that is made for the States east of the Rockies. Mr. Drescher and his committee on the coast have met the canners there and have done a great deal of work; there is no question but that good will result from their efforts. However, there is still much to be done.

"Suggested contracts have been sent to the Walnut Growers' Association, the Dried Fruit Association and the Almond Growers' Exchange on the coast with our views and suggestions. Your new committee will have plenty of work ahead to prepare new contracts for the 1921 crop.

"Your committee desires to thank all who have co-operated and offered suggestions for the improvement of the contracts now in existence and we are sure the new contract committee will desire the earnest cooperation, not alone of the members of the contract committee, but of each member of the association. Your committee wants suggestions—wants to hear what the troubles are, and seeks to determine whether these points that arise cannot be gradually worked out in the various contracts and thus arrive at a contract as near perfect as possible.

"We hope that at the next convention we may have the pleasure of having many contracts in food products line recommended by both the National Wholesale Grocers' Association and other Associations."

### A Gain in New Membership

The Membership Committee reported a gain of 48 names during the past year, but 96 names were dropped from the list because of mergers, retirements from business, resignations, etc.

### Arbitration a Success

The experience of the past year, the Arbitration Committee reported, has clearly shown that the plan of arbitration of business disputes worked out and practiced by the association with the Canned Food and Dried Fruit Brokers' Association and the National Canners' Association is in good working condition. In the past year 110 disputes were arbitrated, 87 on canned foods, 16 on dried fruits, three on beans and five on various other articles. Fifty were decided in favor of the seller, 56 were decided in favor of the buyer, and five were for neither seller nor buyer. In these cases the expense of arbitration was divided between buyer and seller. Some of the more interesting disputes were reviewed in the committee's report.

### Packages of Too Many Sizes

The Educational Committee reported in part as follows:

"The wholesale grocery business does not at this time require increased trade discounts, but it does require less expensive operation under present day conditions. We must have the searchlight turned on our industry, and eliminate therefrom practices which are not conducive to the proper conduct of a business of its importance. If it was good as a war conservation measure to suggest that we sell in original packages, render no non-essential service, make no unnecessary deliveries, standardize packages, eliminate unnecessary sizes of packages, why is it not a good peace program? You will all admit that, whether it be corn sirup, canned tomatoes, canned peaches or any other of our many commodities, we have too many sized packages of the great majority of staples.

"Educational work should be carried on with regard to the question of returned merchandise, the drop shipment plan, parcel post expenses, consignments of merchandise to brokers, or storage warehouses for manufacturers' accounts, adding to the cost of merchandise; lack of uniformity of invoices, from manufacturers to us and from wholesalers to retailers; ways and means to assist the retailer, especially the smaller one, and his clerks; and so many more subjects that time and space forbid their mention. Our success is bound up in that of the retailer—his failure is our loss—and we must render him every assistance in our power that he is willing to accept.

"A democratic association such as the National Wholesale Grocers' Association invites at all times inquiries and suggestions on any subject affecting the wholesale grocery business. The question of price need never be discussed, but in serving the American people, it is unquestionably right and proper that there be an exchange of ideas as to the proper storing and handling of the commodities in which we deal, to enable us to handle our business in the most economical manner."



# Cost of Conducting Jobbing Business

## Some of the Factors Which Enter Into Overhead of Wholesale Grocers

By MELVIN T. COPELAND\*

Director of the Bureau of Business Research, Harvard University

I AM happy to announce that this year wholesale grocers have shown more interest in our study of the cost of doing business than in any previous year. We have received reports that we can include in our tabulations from 317 wholesale grocers. These firms did a business in 1920 of \$616,000,000. In addition we also have reports from twenty-six other firms with sales of \$51,000,000 which will not be included in our tabulations because for one reason or another the figures are not strictly comparable. Including this last group, we have received reports this year from firms with an aggregate volume of sales of \$667,000,000.

These reports do not cover by any means all the wholesale grocers in the United States. Nevertheless, the reports are so well distributed throughout the country from firms of different sizes that we consider the results thoroughly typical. We are satisfied that the common figures would be changed little if we had reports from twice as many, or eight times as many, wholesale grocers. The chief benefit that would accrue from a larger number would be the gain that comes to the individual wholesaler from having his statement checked and also from his having figures that he can compare with those of other firms.

The average cost of doing business in 1920 among the wholesale grocers from whom reports were received was 9.2 per cent of net sales, according to our preliminary tabulation. As heretofore, the largest single item of expense was for sales force which amounted to 2 per cent in 1920. This includes salaries, commissions, and traveling expenses. This is a slightly lower average figure for sales force expense, in percentage of net sales, than we have found in previous years. It generally has averaged from 2.2 per cent to 2.3 per cent. The wages of receiving and shipping force in 1920 averaged 1.1 per cent. Executive salaries averaged 0.9 per cent, office salaries 0.7 per cent—practically the same as the year before. Total fixed charges and upkeep expense, including rent, heat, taxes, insurance, repairs, interest, and so on, was 2.8 per cent in 1920, a figure higher than the average in previous years. It is rather surprising to find that the losses from bad debts were only 0.2 per cent in the wholesale grocery business in 1920, practically no higher on the average than in previous years. Perhaps 1921 may tell a different story.

This year we are tabulating our reports according to the Federal Reserve districts in which the firms are located. This is made possible by the larger number of reports received during this year. It will give us closer comparisons than we have had heretofore. In looking over the preliminary figures that have been compiled, we find that there are some variations in the average figures for the cost of doing business in the different districts. In the Boston district, for example, the common figure for total expense was 9.3 per cent of net sales, in the New York district 8.6 per cent, in the Philadelphia district 10.1 per cent, in the Cleveland district 8 per cent, Richmond 8.3 per cent, Atlanta 9.2 per cent, Chicago 8.3 per cent, St. Louis 9.5 per cent, Minneapolis 10.3 per cent, Kansas City 9.7 per cent, Dallas 10.6 per cent, and in the San Francisco district 8.1 per cent.

In the comparison of the sales force figures, we find that in the Cleveland and Atlanta districts the average was 1.8 per cent. These were the lowest. In the Kansas City district the average was the highest—2.4 per cent, and in the St. Louis and San Francisco districts 2.3 per cent. The

average figure for total fixed charges and upkeep expense was 2.4 per cent in the New York and Cleveland districts. In the Dallas district the average for this item was 4.1 per cent. As was to be expected from general conditions, losses from bad debts were the highest in the Dallas district, 0.6 per cent of net sales in 1920. In the Boston, New York, Philadelphia, Cleveland and Chicago districts the average losses from bad debts were 0.1 per cent of net sales.

### Average Gross Profit 8.8 Percent

The average gross profit in the wholesale grocery trade in all districts in 1920 was 8.8 per cent of net sales, varying from 7 per cent in the Chicago district to 10.2 in the Minneapolis district. The average figure of 8.8 per cent compares with 11 per cent to 13 per cent in previous years. Although total expense was but very little higher on the average in 1920 than in previous years, the substantial reduction in gross profit resulted in losses for many firms. In San Francisco district the wholesale grocers showed an average net profit of 1 per cent of their sales, in the Richmond district a net profit of 0.2 per cent of net sales. In all the other districts the firms from which we received reports showed an average net loss varying from 0.1 per cent in the Boston, St. Louis, and Minneapolis districts to 1.3 per cent in the Chicago district, 1.2 per cent in the Philadelphia district, and 1 per cent in the New York district. These losses in the wholesale grocery trade obviously were the result of the unprecedented slump in prices and are typical of what has occurred during the last year in many other lines of business. I see no reason for viewing the situation in the wholesale grocery trade, however, with any more alarm than in business generally. In the wholesale grocery trade 1916 and 1917 were apparently highly prosperous years; 1918 and 1919 showed small net profits and 1920 a loss. This is part and parcel of the general fluctuations of business that have resulted from war conditions and from those factors which are constantly bringing alternating periods of boom and depression in the business world.

In addition to the figures that I have referred to briefly, we are working out several other comparisons, the results of which will be incorporated in our regular bulletin. The bulletin will be available for distribution within a few weeks. It will be sent of course to every firm that has submitted a report and thereby assisted in getting these results.

We heartily appreciate the co-operation that we have received from the wholesale grocery trade this year as well as in previous years. In addition to the facts that we have thus gathered for use in the Harvard Business School and in other educational institutions, we also have become acquainted intimately with a good many problems of the trade. At the present time the interest in business education is spreading at a rapid rate throughout the country. A large number of colleges and universities are undertaking to give their students a better training for business. It is just the kind of data that has been furnished by the wholesale grocers that is fundamentally necessary for the proper sort of instruction in these new business courses. Business men sometimes are disposed to criticise our educational institutions as being impractical. In so far as that is true, the fault is fully as much with the business man as with the institutions. Unless the business men are willing to open up and furnish the real facts regarding their business, without of course having them used in any way to reveal the identity of the individual concerns, they cannot fairly expect the educational institutions to have the intimate

\*An address delivered before National Wholesale Grocers' Association at Chicago on June 9.



knowledge of business affairs that is essential for thoroughly practical teaching. I can assure you that the co-operation of the wholesale grocery trade in our research work during the last five years has been of tremendous assistance to us in our teaching.

#### Figures Have Already Been Useful

We also have been glad to find that a good many wholesale grocers could make use of the results of this research immediately in the practical every day management of their business. The figures on the cost of doing business have been used extensively for purposes of comparison. When a wholesale grocer has put his own figures beside the average for the trade, he frequently has found the exact point at which his expense was too heavy. In some cases it was sales force expense. When his attention was called to that point, further investigation usually proved to him that the reason was not that he was paying too high salaries and commissions, but poor routing of his salesmen or too small average sales per salesman. For example, one of these cases which happened to come back to our attention was that of a wholesale grocer whose sales force expense was 3.1 per cent of his sales, whereas the average figure for other firms in that year was 2.2 per cent. When we figured out his average sales per salesman we found that they ran only a little over \$70,000 a year, while the average for other firms was well over \$100,000.

The figures in such summaries as the Bureau has issued merely serve as indicators. They suggest the points to which attention should be given. The burden of the solution of the problem and the decision as to the exact method of meeting any difficulty thus indicated remain with the individual executive. Sometimes we find that a merchant expects that some sort of ready-made system will solve all his troubles. That is impossible. We cannot prescribe ready-made methods that will fit all the circumstances throughout the country. We cannot find any genuine substitute for the individual initiative, imagination and foresight which always have been essential for business success. The big task is to get real facts and collective experience which the individual merchant can interpret and apply to the management of his business.

We have encountered a number of large wholesale grocers, as well as some small ones, who still say "My business is different." This statement is amusing to one who has seen the inside facts of numerous businesses. Of course, every business is different—in some details. Nevertheless, there are many points of similarity which make it worth while for every wholesale grocer to compare his figures with the average figures for the rest of the trade. If the differences are due to real differences in circumstances, well and good. Very often, however, other divergencies that cannot readily be explained are brought out. It seems to me that the statement "My business is different" usually indicates a feeling of smug contentment, of superiority, of satisfaction, and that the merchant who uses it believes that he has nothing more to learn from his fellow merchants. If it were not for the proprieties of the situation I could relate a number of interesting impressions regarding some members of the wholesale grocery trade. Under the circumstances, however, I shall not yield to the temptation.

The annual figures on the cost of doing business have been thoroughly useful during the last five years. I am not certain, however, that with the information now available it is worth while to continue to collect these figures each year. Whether or not that should be done seems to be entirely a question for the trade to decide. Be that as it may, I am inclined to believe that the time is now here, or nearly here, when monthly figures on sales, purchases, stocks and credit conditions would be desirable for the wholesale grocers.

#### Complex Problems Constantly Arising

There are also many problems that arise from day to day in the management of a wholesale grocery business concerning which further investigation might be worth while. These include such things as problems of internal operation, perpetual inventories, methods of paying salesmen, cost accounting, and a hundred and one other things.

Cost accounting especially is a subject in which a good deal of interest has been shown. In fact questions of cost were among the first that were presented to the Bureau when it took up its work with the wholesale grocery trade. Before going into the subject of cost accounting, however, it was necessary to develop the standard accounting system which already has been adopted by so many wholesale grocers. The trade may now be prepared for the next step. From such information as we have, however, comparatively little has been done in the way of detailed cost accounting in the wholesale grocery trade. Last year we had reports from one hundred fifty-nine wholesale grocers. One of the questions that we asked on the schedule was whether sales and expenses were departmentized. We found that there were about twenty-five wholesale grocers out of this number that departmentized their sales. In some cases the sales were departmentized into three departments, in others into sixteen to twenty departments, and by one firm into forty-five departments. There is obviously no standardization of these departmentizing methods, and if any cost accounting is to be undertaken the first step will be to work out a classification of the merchandise and a standardization of departments so that in collecting reports each wholesale grocer will include the same merchandise in each department. Until a substantial number of wholesale grocers have standardized their business in this way, it will be futile to attempt to collect any figures on departmentized sales or expenses.

Out of the reports that we had last year there was only one wholesale grocer who indicated that he was departmentizing his expenses in the manner that is necessary for obtaining the costs of operating each department. To departmentize expenses on this basis, it is necessary to prorate each item of expense to each department. Suppose, for example, that one of the departments is flour. The flour department would have to be charged with its prorata share of the sales force expense, advertising expense, receiving and handling expense, rent, and so on for each of the other expenses. The basis for prorating would have to be determined after a careful, first-hand investigation. Furthermore, there are serious difficulties in the way of prorating expenses in a wholesale grocery business. This is because the largest items of expense are those for sales force and for other salaries. To prorate these expenses properly, it is necessary to estimate the amount of time devoted to the handling and selling of the articles in each department. To make these estimates is a far more hazardous undertaking than cost accounting in a factory, where ordinarily it is possible to keep an exact record of the time spent on each job. This cost accounting may be thoroughly worth while in individual wholesale grocery businesses. I am by no means sure, however, that the trade generally is prepared to install the detailed records that would be necessary to secure practical results. Personally I should not be interested in going any further with a cost accounting investigation unless there was evidently a widespread sentiment in the trade indicating that a substantial number of wholesale grocers would keep the essential, detailed accounts, and I have serious doubts on this point.

#### Cost Accounting Only One of Many Problems

As I have stated above, cost accounting is merely one of the numerous complex problems that the wholesale grocer has to face. I do not wish to minimize in the slightest the complexities and the difficulties of these problems. This morning, however, I wish to emphasize some of the broader problems to which I already have referred, especially the advantages that might be obtained through having current monthly figures on conditions in the trade.

I had planned to discuss at some length the business outlook. I find so many other things to say that I shall have to forego that. Briefly, however, I am convinced that we definitely turned the corner in business depression several months ago and that the gradual improvement which has begun to occur in several industries is the forerunner of general and widespread improvement in business. The improvement may be slow; it may be spotty; it may



be threatened from time to time by political disturbances in Europe and other world influences. Nevertheless, American business is thoroughly sound at heart. In this country there are one hundred five million people, most of whom are living in an ordinary, normal fashion, and it is these one hundred five million people who at the same time are consumers and laborers, merchants and producers. They must be fed, and clothed and entertained. I am not at all pessimistic regarding the ability of the business men of this country to meet the conditions which they face. Whatever assistance or whatever handicaps they may encounter from governmental sources, I thoroughly believe that we will go ahead and that we already are going ahead toward a period of prosperity.

Now is the time, however, when the wholesale grocers and other business men should consider seriously the problem of lessening the severity of fluctuations in business in the future. Unless we learn the obvious lessons of the past eighteen months, two or three years hence we may find ourselves in exactly the same predicament as today. It is not reasonable to expect that we can eliminate all the ups and downs in business. Nevertheless, the fluctuations in business conditions due to the faulty working of our business methods and the lack of foresight on the part of merchants and manufacturers can be corrected in part. We have not learned how to do this. That is one of the big problems of the future and one to which I think all the business men of the country should now devote a good deal of attention.

How are we to know when the next peak of prosperity has arrived? How are we to prepare for the next decline in prices which may come two years from now, three years from now, or after some other interval of time? How are we to relate conditions in the wholesale grocery business to business conditions generally throughout the country? These are big problems which seriously affect the future welfare of the wholesaler grocery trade just as they affect the welfare of all other industries. There are some factors which undoubtedly are peculiar to the wholesale grocery business itself. There are others which are common to many industries and trades. From the standpoint of general public welfare as well as from the standpoint of business prosperity, it is essential that we grapple with these problems, and now, while our experiences of the last twelve months are still fresh in mind, is the time for us to begin to prepare plans for meeting the difficulties that will arise during the course of the next business cycle. Information of the sort that was collected to show conditions in the wholesale grocery trade in January, 1921, would be particularly advantageous. That, however, was merely a starter and far from adequate. I recommend that the wholesale grocers consider carefully the accumulation of a thorough going and comprehensive record of the tendency of their business from month by month. Is the time not ripe to undertake this task in a broad, liberal way, for the sake of the trade as a whole and also as a contribution toward the improvement of general business conditions and the elimination of some of the wastes and hardships which come through business depression?

Advertising the Hawaiian Pineapple

Telling the public about the qualities of the pineapple, its food value, and the economy of its use as a fruit, will be the object of a nation-wide advertising campaign during June, July and August, instituted by the pineapple canners of Hawaii for the purpose of increasing the consumption of canned pineapple.

One of the principal objects of the campaign will be to introduce crushed or grated pineapple, which is but little known to the general public. Ice cream sodas, sundaes and other delightful soda fountain dishes are prepared with crushed or grated pineapple. This product may be used in many other appetizing ways, such as in pies and as a sauce. Pineapple pie, unknown a few short years ago, is now running a close race with apple pie, and this is made with crushed or grated pineapple.

An Analysis of Foreign Trade in Food Products

The Committee on Foreign Relations, of which F. T. Fischer is chairman, analyzed foreign trade conditions and called attention to the necessity for improved bank facilities for carrying on our foreign commerce.

Exports of food products from the United States during the past three years were tabulated from the official figures of the Bureau of Foreign Commerce and were given as follows:

Commodity	1918	1919	1920
Canned Salmon .....	\$13,149,307	\$28,644,706	\$12,186,733
Other Canned Fish .....	8,609,313	6,755,074	8,183,729
Dried Apples .....	311,350	4,109,828	1,508,987
Dried Apricots .....	754,780	8,505,348	2,581,750
Dried Peaches .....	544,455	1,559,873	1,465,600
Dried Prunes .....	2,177,976	15,721,951	11,738,312
Dried Raisins .....	4,668,021	13,089,366	9,505,202
Preserved and Canned Fruit	5,312,819	41,475,622	21,542,273
Canned Beef .....	51,498,810	20,672,964	5,951,629
Canned Pork .....	10,311,409	11,054,882	8,323,914
Butter .....	10,868,953	17,504,446	10,142,403
Canned Sausage .....	3,942,572	8,673,794	6,532,258
Cheese .....	14,159,721	16,291,319	5,054,189
Canned Milk, etc. ....	72,824,897	121,893,337	65,239,020
Oleomargarine .....	2,398,908	6,576,760	4,567,174
Lard Compounds .....	10,258,536	31,605,885	7,218,845
Vegetables, Canned .....	12,419,519	11,355,391	6,340,359
Total .....	\$224,211,346	\$365,490,546	\$188,082,377
Tea .....	1918	1919	1920
Coffee, roasted .....	\$6,661,802	\$4,852,273	\$731,341
		8,816,581	9,803,574
Total .....	\$6,661,802	13,668,854	\$10,534,915
Breadstuffs: .....	1918	1919	1920
Bread and Biscuits .....	\$1,277,704	\$2,506,447	\$2,731,879
Barley and Buckwheat ...	34,773,535	56,945,281	30,871,895
Corn .....	69,269,329	18,624,386	26,453,681
Corn Meal, Rice, Rye and Rye			
Flour, etc .....	185,153,709	187,210,845	194,843,787
Wheat .....	260,612,978	356,898,296	596,957,796
Wheat Flour .....	244,653,422	293,452,748	224,472,448
Other Breadstuffs .....	5,751,037	3,803,972	4,754,352
Total .....	\$801,491,714	\$919,441,975	\$1,082,085,838
Meats .....	1918	1919	1920
Fresh Beef .....	\$109,605,363	\$40,280,747	\$17,564,887
Pickled and Cured Beef ..	7,921,220	8,739,141	3,659,815
Bacon .....	315,968,064	373,913,227	156,298,769
Hams and shoulders cured	145,674,888	189,428,837	50,887,588
Fresh Pork .....	2,907,894	8,347,557	9,090,492
Pickled Pork .....	8,535,017	8,632,518	7,671,169
Mutton .....	387,132	632,667	758,526
Other Meat Products .....	6,943,692	11,642,612	7,168,444
Total .....	\$597,943,270	\$641,617,306	\$253,099,690
Summary .....	1918	1919	1920
Canned fish, meat, fruits			
and vegetables; dried			
fruits; butter; eggs &			
milk .....	\$224,211,346	\$365,490,546	\$188,082,377
Tea and Coffee .....	6,661,802	13,668,854	10,534,915
Breadstuffs .....	801,491,714	919,441,975	1,082,085,838
Meats .....	597,943,270	641,617,306	253,099,690

Grand Total ....\$1,630,308,132 \$1,940,218,681 \$1,533,802,820

This summary appealed to the committee as fairly explanatory of the reasons for dull business along export lines during the past year. While the outlook, it was stated, is brighter for the last half of the next fiscal year it is not to be expected that the business horizon will clarify completely until the present economic readjustment working toward lower costs now under way is completed, after which our jobbers and manufacturers, though strained and depressed by the results of value deflations, will have laid the foundation for a new era of trade relations with the world's markets.

Anheuser-Busch, Inc., Announces New Products

Anheuser-Busch, Inc., St. Louis, Mo., have announced in full-page newspaper advertisements two new products, "Kaffo," a carbonated coffee beverage, and "Buschtee," a carbonated tea beverage. They will be served at soda fountains and other "drink stands." Retail grocers and other dealers will supply the family trade.



# EDITORIAL

## Dehydration Recovering from Setback Following the War

MUCH has lately been published regarding dehydration. Several articles appearing in The American Food Journal within the past year or two have contributed to the literature on this important subject. It is unfortunately true that some of the impetus given to the new industry during the World War has been lost, but in due time this will be regained, the best authorities agreeing that once certain fundamental difficulties have been fully overcome the future of dehydration in preserving the food supply will be of inestimable benefit to producer and consumer alike.

During the war a considerable number of companies engaged in dehydrating fruits and vegetables, under the stimulus of war orders for the United States Army. Only a few of these manufacturers had previous experience in dehydration, hence it was but natural that many mistakes were made and some inferior products were turned out. Considering, however, the many difficulties met with by these pioneers in the commercial application of this principle of food preservation, the rate of progress may be regarded as very rapid.

Some of the companies which started in to dehydrate fruits and vegetables on a large scale have fallen by the wayside, but there remain several large companies, managed by men who not only know the many advantages of dehydrated foods, but who realize also the necessity of popularizing such foods through educating the housewife to change her age-old custom of using fresh vegetables only when she can get them and doing without them when they are not in season. A popular impression which must be removed by educational advertising is that sun-dried products are the same as those which are dehydrated.

One of the reasons for the post-war slump which the new dehydration industry has suffered is the unfavorable impression created for the product by some of those who were little experienced in the work. Through carelessness or lack of technical knowledge, some dehydrated products have developed infestations of Indian meal moth after leaving the factory. Insect infestation has been overcome, but it may take some time to live down the injury which was done.

The stage is now all set for fairly substantial progress in dehydration. The experts who have been giving study to the subject for many years are perfecting equipment more suitable for commercial production; capital is becoming available for the promotion of new companies, and the foremost manufacturers now in the field will welcome the right kind of competition in the belief that a larger number of companies all working toward the same end will help to popularize the products much more quickly than a few companies can accomplish this object. One large company has already expended about \$500,000 in national and local advertising.

Not only must the ultimate consumer be educated to appreciate the advantages of dehydrated foods, but the producer must also be educated as to the value of this method of saving fruit and vegetable crops. It is estimated that from 20 to 40 per cent of all fresh fruits and vegetables spoil between the producer and the consumer. This includes much which does not leave the producer's farm because of inadequate shipping facilities, lack of sufficient labor at picking time or low market prices which

make harvesting unprofitable. If these crops can be saved a vast benefit will accrue both to producers and consumers, for such surplus crops can be utilized in seasons of crop shortages, the perfectly dehydrated foods remaining fit for human consumption for many years.

In European countries the advantages of dehydration have been more fully recognized than in the United States. S. C. Prescott and L. D. Sweet, in an article on Commercial Dehydration which appeared in the Annals of the American Academy of Political and Social Science, May, 1919, stated that Germany possessed about 1900 dehydration plants in 1917.

While the dehydration industry is still in its infancy in this country, it is important that the terminology as regards this and kindred methods of preservation become well defined. A committee of representative producers, investigators and dealers in California not long ago adopted the following recommendations:

1. That "drying" be considered the general term applying to all methods.
2. That "sun drying" be used to designate the drying of fruits by the sun's heat.
3. That "evaporation" and "dehydration" be considered of equal value in designating the drying of foods by artificially produced heat.

Prof. S. C. Prescott, former chief of the Division of Dehydration Investigations of the United States Bureau of Agriculture, prefers to give modern dehydration a meaning somewhat different than that of evaporation. He considers that dehydration, being a more carefully controlled process and results in a superior dried article to that produced by evaporation, should have a distinctive designation. His definition follows: "When we speak of 'modern' dehydration we mean foods which either with or without previous treatment have been subjected to the action of carefully regulated currents of air in which the temperature and humidity are both properly controlled, a process which results in the food gradually losing water, but without giving up its color or flavor or having its cellular structure injured."

## Watching Our Step in Tariff Legislation!

NO tariff bill is perfect. The emergency measure just passed by Congress and signed by the President is probably as imperfect as any. Its chief recommendation is that it is to last for only six months. Meanwhile, a permanent tariff measure is being framed and more careful attention should be given to every feature of it.

The emergency tariff bill was principally a sop to the farmer. That it will do him a great amount of good nobody believes. The permanent tariff should depart from old-fashioned ideas of protectionism and be patterned along lines that are in harmony with our new conception of international relations.

Without regard to previous convictions, multitudes of the best business men and many of the most thoughtful editors are loud in their condemnation of the tendency of tariff legislation that is to be seen in the present houses of Congress. They feel that this is no time for additional barriers when billions of dollars are owed us by foreign countries, which cannot possibly be paid for except through the importation of raw materials, food products and manufactured goods. They also look with apprehension on the possible loss of foreign markets which they believe will result from such tariff legislation as is being contemplated.



# FOOD NEWS FROM WASHINGTON



## Prohibition Not Helping Grape Fruit Sales

So Say Manufacturers Who Appeal to Congress for Relief from Soft Drink Tax

Washington Bureau,  
The American Food Journal,  
622 Albee Building.

**P**ROHIBITION did nothing to help the grape juice industry but, instead, because of the great number of thirst quenchers which were immediately put on the market, made competition keener than ever before, it was declared when taxes on soft drinks were discussed before the Senate Finance Committee on May 25 by representatives of the grape juice manufacturers and members of Congress from grape-growing districts.

Appearing as the representative of the American Fruit Juice Producers' Association, John F. Welch, manufacturer of grape juice, told the committee that this tax on the producer is burdensome to the extent that it is defeating its own purpose, that it is a double and even a triple tax, that it is discriminatory and out of proportion to other products with which it is classed and that it is a tax on an agricultural product.

"There has been a great deal of misinformation about the size of the grape juice business, about the prosperity of the business," said Dr. Welch. "There are only some twenty companies. There is not the amount of money invested in the grape juice business in proportion to other so-called large businesses. The capacity of all plants is only some 11,000,000 gallons. Yet it is large in proportion to the output of grapes in the producing sections.

"In regard to the prosperity of the business, it may be significant to you gentlemen to state that in the ten years past the average gross profits have not reached ten per cent, when it should have been the most prosperous period in our history. We depend on the volume of business for our profits. We turn our money only once a year and ten per cent does not sound like a very prosperous business.

"We were confronted with increasing cost of raw materials, boxes, bottles, freight, selling cost, advertising, and everything that went into the cost. These costs increased very rapidly along in 1917 and 1918, and then came the tax that amounted to as much as what we would call a good profit in our business. Meanwhile, the eighteenth amendment had gone into effect. We did not expect any tremendous increase in our business. Our experience in the many States that had gone dry showed us that the per capita con-

sumption in the dry States was not any greater than in the wet States. So that, contrary to popular opinion, the eighteenth amendment was of no value in increasing the sales of grape juice. Part of that is due to the tremendous number of new drinks, thirst quenchers, which came on the market. The grape juice consumption is declining under the unreasonably high prices and a large part of that is due to this tax. We carried over a considerable proportion of our 1919 pack, and we packed our little better than 3,000,000 gallons in 1920 in these various grape juice companies."

Only a trifle over \$76,000 has been collected in taxes since the last pack in 1920 up to April 1, 1921, he commented in explaining the intricate process involved in the manufacture of grape juice. Not only is there a tax on the grape juice itself, but when it is served at a soda fountain with carbonated water, another ten per cent tax is collected. The manufacturers of carbonated beverages have a big advantage over the grape juice producers, since much of their business can be done locally, while grape juice must often be shipped for long distances, at high freight rates.

The use of grape juice in hospitals and for the sick is growing steadily, Representative Clayton, of Delaware, told the committee, and in view of this, Congress should not hamper the production of the beverage, especially as there is no tax on grape jelly or grape jam, which are made of the same ingredients. There are 335 calories per pound of grape juice, it was brought out, giving the drink a high food value. The tax on grape juice is not only a tax on an agricultural product, but a tax on food values.

### Fruit Growers Also Oppose Tax

Some three thousand fruit growers of Pennsylvania and New York registered their opinion on this tax through D. K. Falvay, president of the Chautauqua and Lake Erie Fruit Growers' Association. There are some 80,000 acres of vineyard in New York, Mr. Falvay said, 40,000 in Michigan and 20,000 in Ohio, but grapes are growing in all States more than 38,000 carloads, valued at over \$30,000,000, being shipped on the railroads last year.

The interests of the producers and manufacturers are in perfect harmony, the witness said, a very unusual condition, but the relations between the grape growers and the grape-juice manufacturers are and always have been the pleasant-



est possible. The manufacturers have always given the grower a square deal and paid for the produce purchased, and their policy has always been one of cooperation with the grower.

"With the present ten per cent tax on grape juice the grape industry is seriously threatened," Mr. Falvey declared. "The grape-juice manufacturers cannot pay a living price to the growers and then pay a tax amounting to nearly \$40 per ton before the juice is put on the market. The growers cannot raise grapes at a price that will permit the grape-juice manufacturers to purchase them and sell the juice with this tax added.

"While the conditions presented are apparently limited to a few localities, the fact remains that the whole grape industry of the nation is affected. As every State is growing grapes the individuals of each State think that the grapes grown in his State are just as good, if not a little better, than the grapes grown in another State, and perhaps they are. The grapes grown by each State first supply its home markets and the large grape belts are shut out from those markets unless the price is lower for the grapes shipped in."

## Haugen Bill to Regulate Packing Industry Now Being Considered

ENACTMENT of the Haugen bill to regulate the packers is urged upon the House of Representatives in a report which has been submitted by the House Committee on Agriculture through its author, Representative Haugen, of Iowa. This measure is declared by the committee to be the bill which should be enacted, and was submitted only after lengthy hearings and careful consideration. It is divided into four sections, the first dealing with definitions, the second dealing with the regulation of the packers, the third dealing with the regulations of stockyards and transactions taking place at stockyards, and the fourth dealing with general provisions relating to both packers and stockyards.

Packer bills, the committee's report sets forth, have been pending before various committees and both houses of Congress for a number of years. Seven series of hearings have been held since the early fall of 1918 on the subject. Last Congress the agriculture committee held 40 days' hearings on meat-packer legislation, covered in approximately 3,000 pages of printed testimony, and the full committee and subcommittee spent months in drafting and considering a bill. The bill agreed upon by the committee last Congress was reported to the House as an amendment, in the nature of a substitute, to the Senate packer bill which had passed the Senate and been referred to the committee. During this session the committee has held further hearings on the bill, and the full committee and subcommittee considered the various amendments presented by representatives of the Department of Agriculture, farm organizations, the consumers, shippers and packers.

The bill finally agreed to, which has been reported to the House, is practically the same as the substitute reported by the committee last Congress, except that the substitute placed the jurisdiction over the packers in the Secretary of Agriculture and over the stockyards in the Interstate Commerce Commission, while the Haugen bill places the jurisdiction over both the packers and the stockyards in the Secretary of Agriculture.

"A careful study of the bill will, I am sure, convince one that it, and existing laws, give the Secretary of Agriculture complete inquisitorial, visitorial, supervisory and regulatory power over the packers, stockyards and all activities connected therewith," declared Representative Haugen in his report; "that it is a most comprehensive measure and extends farther than any previous law in the regulation of private business in time of peace, except possibly the interstate commerce act. It has been worked out with great care and painstaking, with a view of providing a constructive measure that would properly safeguard the interest of the public and all elements of the industry from the pro-

Transportation is a serious problem, he said, necessitating in some cases the use of refrigerator cars at a period when such cars are hard to get. The crop must be moved immediately, grapes cannot be kept in cold storage, and those that cannot be sold on the market must be taken by the grape juice manufacturers or are lost. It was pointed out that while the manufacturer of synthetic beverages pays one tax, grape juice pays three—on the raw material, on the cost of production and transportation, and at the fountain. "The danger," he said, "is that the cost of the product will be so high that the consuming public will refuse to buy grape juice and will turn to some other beverage. In fact, just such a condition now exists and we are asking that it be changed."

One of the large grape juice factories in New York has had to go into the hands of a receiver, Representative Daniel A. Reed of that State told the committee, while in Washington the loganberry manufacturers are in a similar predicament. "Something will have to be done," he said, "because the grape juice has gone to such a height in price that the people will not buy it, and the country is not getting the revenue from this business because the grape juice is not being sold."

ducer to the consumer without destroying any unit of it.

"The Secretary of Agriculture is given jurisdiction over the packers, stockyards, commission men, traders, buyers and sellers in the stockyard, thereby dispensing with the necessity of creating new commissions, bureaus, etc., duplicating existing machinery. He has the power, under this bill, to gather and compile information concerning, and to investigate from time to time the organization's conduct, practices and management of the packers' business and stockyards, including all transactions in and about such yards by all concerns or persons dealing at the yards. He has the power to require reports and answers, under oath, or otherwise, as often as he may deem necessary concerning all such matters. He has the power, by subpoena, under the provisions of the bill to conduct hearings, to require the production of books, papers, and documentary evidence and to require the attendance of witnesses. The Secretary is given the power, under the act making appropriation for the current year, to be thus applied, to gather and promulgate all such information, including that relating to the demand, supply, consumption cost and prices of, and the facts relating to the production, manufacture, storage and distribution of live stock and live stock products. In this bill he is given the further power to prescribe the manner and form in which the packers, stockyards and all other concerns operating in said yards, shall keep their books and accounts. He is given the power to prevent packers, stockyards, companies, and all persons dealing in the stockyards from engaging in unfair, unjustly discriminatory or deceptive practices or devices. He is given the power to regulate and prescribe the practices on the stockyards, to prevent abuses and may award damages in redress of any unfair practices or abuses. He is given the power to regulate and prescribe all rates, fees and charges for service in the stockyards, including the fees of commission men.

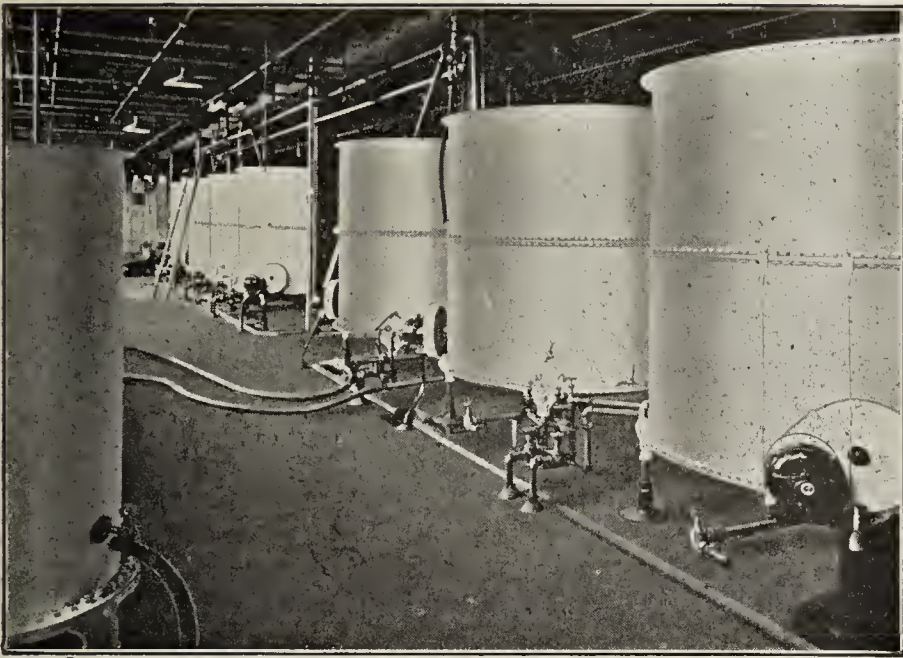
"The bill further coordinates the duties of the Secretary of Agriculture so that it prevents overlapping of authority and duplication of jurisdiction of other departments of Government having regulatory powers which previously existed. It provides for ample court review for any of the orders or regulations of the Secretary of Agriculture, so as to protect the industry from any mistakes of judgments or unwarranted use of the power thus delegated.

"The bill also amply protects the interest of co-operative associations in that it provides specifically for co-operation in the marketing of their products through such organizations in the stockyards by permitting them to return to their members on a patronage basis their excess earnings on live stock handled, subject to regulation by the Secretary."



# The Manufacture of Soda Water Sirups

## Some Interesting Features of the Plant of the J. Hungerford Smith Company, Rochester, N. Y.



Seven Pfaudler glass lined tanks, equipped with horizontal agitators, now being used by the J. Hungerford Smith Company for the holding of root beer, orangeade and similar products

**Editor's Note.**—The remarkable growth in recent years of the soda fountain trade has resulted in the building up of several large manufacturing plants devoted almost exclusively to soda water flavors and other beverage products sold at soda fountains. One of the largest of these plants is that of the J. Hungerford Smith Company at Rochester, N. Y., a description of which is given in this article.

NATURE has ordered that various fruits come to most excellent flavor in certain lands. The J. Hungerford Smith Company has gone world hunting for the best and found them. The most delectable cherries are grown on the shores of the Mediterranean. The finest-flavored walnuts mature in Southern France. Delicious Red Spanish pineapples ripen best in Porto Rico, and vie in quality with the pineapple of Hawaii. Cuthbert raspberries are grown in the fertile valleys of New York state. Klondike and Wilson strawberries raised on the Atlantic shores are unexcelled. Vanilla beans of finest flavor develop in Mexico. The Rochester company has discovered the choice habitats of these and other fruits whose delicious flavors are sought by the public and it is from these various regions that it takes the fruit it uses in its manufacture.

Wherever fruits and products for the plant are purchased, the company's field men may be found seeing to it that only the finest of fruit is bought, fruit that has grown to perfection under careful cultivation. The fruit is carefully picked, inspected, packed and shipped to Rochester, always under the zealous eyes of field representatives.

The keystone in the quality manufacturing of the plant is its large scientific laboratory whose staff of specially-trained food chemists exactly test raw materials as well as finished products, guaranteeing standardization. Mr. Smith is generally considered to be the country's leading chemist in fruit sirups and flavors. Every day sees him at work in his research laboratory, assisting in experiments which usually lead to improvements in manufacturing processes, and products. From his start upon a career of manufacturing chemist, Mr. Smith has maintained a fine laboratory, and the one at the plant today is claimed to be one of the best equipped of its kind in the world.

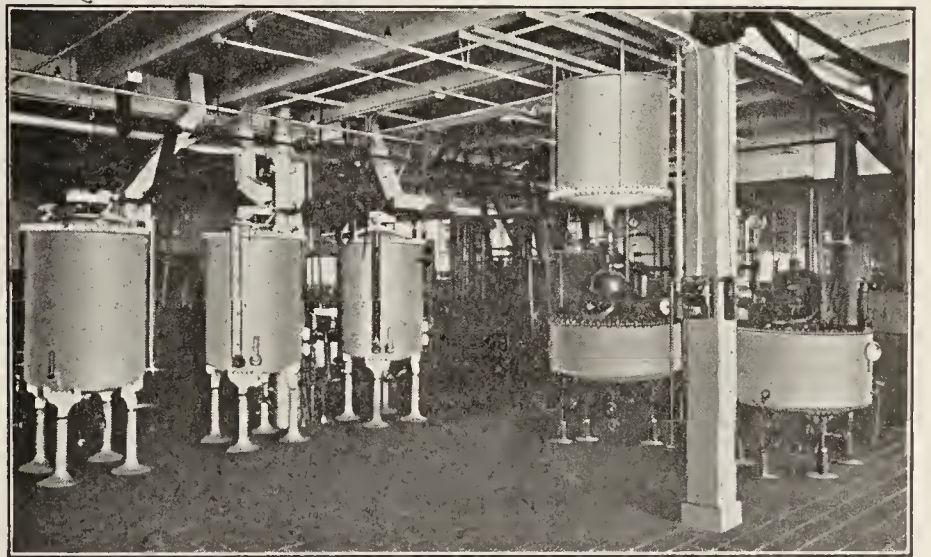
### Cleanliness a Feature

As one enters this plant he observes with satisfaction the cleanliness of the factory and its workers, and the care and scrupulous detail everywhere in evidence. He admires the methods employed in keeping raw fruits under proper refrigeration and is astounded at the immensity of the cold and dry storage facilities required. It is a revelation to walk into the storages and see thousands of barrels, huge rows of tin and other containers and piles of other packages—all containing fruits and raw products. The cold storage has a capacity of 7,500 barrels and in the power house is found refrigerating equipment—the ammonia process is used—equivalent to melting forty-five tons of ice daily. The dry storages have a total floor space of 30,000 square feet.

A modern power house furnishes the power and steam used by the plant, but electric current may be taken from the city system at any time it is needed. The power house has a 350 horsepower engine, dynamos and three boilers with a steam generating capacity of 375 horse-power. Its 125-foot smoke stack adds to the external attractiveness of the plant.

One of the sights which first takes the eye of the visitor is a battery of big kettles, each of 200 gallons' capacity, all double-jacketed, steam-heated and with thermometers to insure correct temperature. This is the kitchen of the plant. T-shaped arms revolve slowly at the bottom of the kettles, stirring the fruit while it is cooking. After the fruit is properly cooked, it is dropped from these kettles to agitator tanks on the floor below. These supply the filling machines.

In sirup making, sugar is dumped directly into the process tanks, but in the manufacture of crushed fruit and other products it must be sifted so as to remove all foreign substances which might otherwise get into the finished product. A truckload of sugar is shoved onto scales and weighed. It is then dumped into a box from which a combination of spiral and bucket conveyors takes it to an overhead sifter which sifts it back into the truck. The plant when operating fully consumes upwards of 125 barrels of sugar daily.



The three tanks shown at the left of this picture, equipped with agitators, are used for making flavoring sirups for cherries, nut sundaes, etc. At the right are shown two glass lined vacuum kettles which work in tandem at the processing of strawberries. These vacuum kettles as well as much of the other equipment used in this plant were designed especially for the J. Hungerford Smith Company by the Pfaudler Company



Special apparatus is required to make chocolate sirup. It is made in 400-gallon batches in a big tank, each batch taking four barrels of powdered chocolate. The steam-heated tank has devices to indicate the water content, temperature and general condition of the sirup. Three batches of this sirup are made daily at the plant.

#### The Handling of Nuts

Chocolate reminds one of nut sundaes. Walking to another part of the factory, the visitor discovers how pecans and walnuts are made into the compounds used at the soda fountains. The walnut meats are bought in fifty-five pound boxes, while the pecan meats come in barrels or five-pound containers. These meats are supposed to be in perfect halves and free of shucks and refuse. The J. Hungerford Smith Company never supposes. Women spread the nut meats out on a long table and pick them out one by one. Usually about a pound of waste is taken from a fifty-five-pound box of walnuts. Following sorting they go through a machine devised by Mr. Smith, a machine whose multitudinous blades running laterally and vertically cut the meats into pieces five-sixteenths of an inch square. The chopped nuts now are weighed into new glass jars. A vacuum cap fits over a jar. The turning of a valve creates a vacuum. This is closed and another valve opens to admit sirup to the can, the vacuum drawing it rapidly into all available space. Without this ingenious process it would require a half hour or more to fill the can properly with sirup. In other parts of the factory the visitor may see machines shredding figs, cutting cherry rings and other interesting work.

Vanilla beans arrive from Mexico in sixty-pound tins. The beans are six to nine inches long. They are chopped up in a great tank by knives which operate up and down and work up the beans for use at the rate of about fifty pounds every twenty-four minutes, and then ground to powder. A mash is made with an alcoholic menstrum. This is put in barrels and held for six months. The extract is taken off in hydraulic presses and the dregs are sent to an agitator where more extract is recovered. Lemon extract is made from lemon peel similarly treated, and the other flavoring extracts undergo a like process. An idea of the extent of the strawberry sirup and preserves manufactured is somewhat appreciated when it is learned that the company's investment in that fruit last year totalled more than \$700,000, and that 8,538 barrels of packed berries arrived in trainloads at the plant, a total of 3,900,253 pounds. Governor Townsend of Delaware is the owner of a number of large strawberry-packing plants in Delaware, Maryland, Tennessee and Virginia. The company has an arrangement with him whereby he packs the strawberries its field representatives purchase. The berries are sorted carefully and packed in barrels with alternate layers of sugar. The fruit arrives at Rochester in the finest condition.

The strawberries are cooked in two glass lined steel vacuum kettles which were especially designed by the Pfaudler Company for the J. Hungerford Smith Company, as well as much of the other equipment used in the plant. These kettles work in tandem so that either one may operate independently of the other. One thousand pounds of berries are processed in these vacuum kettles every half hour and the resultant strawberry sirup has a flavor that has created a large demand for the product.

#### Maraschino Cherry Packing

It is hard to conceive how the world could use all the maraschino cherries manufactured at this plant. While some homegrown cherries are used by the plant, the most of its cherries come from Italy. The company had as many as sixty carloads of these Italian cherries arrive at one time in its yard. Originally red and white, the cherries are bleached white in Italy and packed in barrels. Arriving at the local plant, they are stemmed and pitted by machinery located in the basement of the plant and graded automatically to five sizes. Both stemming and pitting are intensely interesting operations, except that one sort of becomes seasick watching the shimmying of the stemming

machine and the conveyors of the grader. The pitting is done far better than it could be done by hand, one having to look twice to see that a cherry has been pitted. Cherry waste from these machines is made into crushed maraschino.

The pitted and inspected cherries are put in tanks and washed repeatedly until the bleach is removed. They then go to big tanks filled with a coloring sirup. There are sixty of these 240-gallon tanks and they have a capacity of 8,000 pounds of cherries daily. The sirups of these tanks are gradually strengthened in specific gravity during this processing, rotary pumps bringing the tank sirups into a central Pfaudler agitator tank at stated intervals and returning them. By this method the perfect processing of cherries is assured. The cherries, when they arrive, are white and flavorless, simply offering fine vehicles for carrying sugar, cherry flavoring of excellent value and color. One sees them being colored red, green and white. When finally filled, finished and canned in glass jars they present a beautiful sight.

#### Root Beer Also a Product

Enormous quantities of root beer are made by the J. Hungerford Smith Company out of wild cherry bark, sassafras, wintergreen and other herbs, berries, barks and roots. The concentrated sirup is sold by the company in five-gallon cans. A few years ago it originated the stein service in root-beer dispensing and it has proved to be a master builder in the root-beer business. Today there is hardly a dealer in the country who serves root beer as a solid drink in a small glass.

You who have watched the man at a soda fountain ladling out a spoonful of white, fluffy marshmallow float have often wondered how it was prepared. Great quantities are made at this plant, along with nut frappe and nut sirup products. Three open kettles cook the marshmallow compound. It is poured into cans and these filled cans are placed in heating machines. A stirring frame-work of metal adjusted to position revolves rapidly in the can, whipping the cream-like mixture.

The company manufactures huge quantities of orangeade, which is the concentration of ripe, luscious oranges in beverage form. It is made in great agitator tanks of 1,100 gallons capacity, whose propellers churn the compound. Orangeade manufacture consumes heavy amounts of sugar, 6,400 pounds going into each 1,000 gallon batch. The golden orangeade presents a beautiful sight as it runs down into a filling tank, coursing through a big, round ball of screening scrim. It is put up in stone and glass jugs which have been thoroughly washed inside and out by a sterilizing shower. The filling is accomplished by a vacuum process, one jug being filled every seven seconds. Some other fruit sirups are jugged and all these are previously sterilized.

The manufacture of other fruits into preserves, sirups, jellies and compounds is equally interesting. The crushed pineapple arrives from Hawaii and Porto Rico in one-gallon tin cans. The company, however, is equipped with machinery to work up the whole pineapple and does so at times. It also has orange and lemon peeling machines, wonderful artists at these intricate specialties. Its ingenious orange-peeling machine, the only one in existence, has peeled 250 boxes of oranges a day, or at the rate of 115 oranges a minute. Many Rochesterians used to go to the plant and purchase the peeled oranges. Susan B. Anthony was numbered among these customers. The peels used in extract making are cut in shreds so the oil cells are broken and release their oil.

Most of the company's products are put up in glass jars containing one and two quarts. The new jars are washed and rinsed and set back in their packing with rubbers placed on their tops. They travel in their packing cases over roller conveyors to the floors below where the filling is taking place.

#### Vacuum Process Used

Preserved fruit as well as sirups are canned under the vacuum process in turret machines. An empty jar is placed



on the slowly revolving turret. A vacuum cap comes down. Vacuum is created and the fruit or sirup is drawn down into the can until it is full. The flow then automatically ends and the turret base delivers the jar to a revolving disc which takes it to a belt conveyor. Four jars usually are filled at a time.

The filled jars next go to one of the ten big steam retorts where they are processed in steam. One retort holds 150 half-gallon jars. There are also four hot-water tanks. The filled jars are lowered into their hot water by an electric hoist. A clock watches over each retort, being adjusted so it will ring as soon as the time of a given retort's work is up. Now, the filled jars go to a giant washer. As they travel through it on metal belts, they are thoroughly washed with hot water. The company has two of these machines and each saves the work of twenty-five women. Women stand before the belts leading from the washer, using machines to put lithographed labels on the cans. Each label has certain perforations which enables the company to tell to the day when it was packed and how. The filling, steam-processing, washing and labeling of the fruits and sirups is accomplished at marvelous rapidity, so efficient is the machinery and so capable the workers. For instance, thirteen half-gallon jars of chocolate are filled every minute.

Jelly-making is a comparatively new business with the company, but already it is faced with a demand for its delicious true fruit jellies that insures tremendous growth for this department. The jelly is cooked in kettles. The new glass tumblers are washed by machinery and carried by conveyors through a thirty-foot drying oven to the turret filling machines. The tumblers are filled and capped under vacuum and again washed by hot spray. One of the latest jellies carries spearmint flavoring.

The plant has a fine cooperage shop manned by experienced workmen who accomplish really marvelous things with broken barrels. Used barrels are completely overhauled here. Broken staves and warped heads are removed. The warped heads are steamed and held flat for twenty-four hours under 6,000 pounds pressure. They are restored to their former state of serviceability. A giant brush revolving rapidly inside of a barrel cleans it in fifteen seconds better than could be done by hands in a half hour. The department handles about 50,000 barrels yearly

and makes more than 1,000 kegs out of broken parts of barrels. It is one of the many sidelights on the efficiency found at the plant.

#### Consumes 7,000,000 Pounds of Sugar a Year

The visitor leaves the plant thrilled over the enormous production he has seen taking place, a production which is the backbone of the successful soda fountain industry. He has learned that the plant has made \$1,000,000 in finished goods a month, that it used more than 7,000,000 pounds of sugar last year, that its usual stock of raw materials and finished goods waiting to be shipped amounts to approximately \$2,000,000, that it manufactures more than 100 kinds of fruits and sirups besides a large line of flavoring extracts, root beer, jellies, nut sirups and frappes, marshmallow float, apple sauce and other products, that its business, including that of the Michigan factory, amounted to nearly \$6,000,000 in 1920.

Quite a start from an humble beginning with about \$5,000 in capital. The authorized capital of the company is now \$1,500,000 in 8 per cent cumulative stock and \$1,100,000 in common stock. The corporation recently has sold an additional issue of \$225,000 worth of its preferred stock and declared a dividend of 500 per cent in common stock. As a result of this financing the company will have outstanding \$575,000 worth of its preferred stock and \$600,000 of its common stock.

The plant normally has approximately 250 employees. It is now remodeling some large rooms into locker and rest rooms for employees. The men and women will have separate sections and beyond each will be a fine dining room to serve noon meals and lunches to the employees of the plant. These rooms will be finished in white. The visitor is impressed with the maturity and efficiency of the employees of the plant. A large part have been years with the company and are enthused with their work.

The J. Hungerford Smith Company has, from all indications, only scratched the surface of its opportunities. Its new departments are all expanding under the tremendous demand for frozen foods, pastry, soft drinks, jellies, confections and similar dainties. And in its research laboratory Mr. Smith and his assistants are working for new flavors to give an insatiate world whose taste daily becomes more educated, more craving.

### Pectin as a Factor in Making Jellies

BY DR. JOHN A. MARSZALEK

Director of Research, Industrial Research Laboratory,  
Chicago

Ever since the researches of a French chemist named Braconnot, it was known to scientists and chemists, that a substance called pectin is alone responsible for the production of jellies by simple evaporation of fruit juices. He succeeded in isolating this substance from various other ingredients of fruit juices in the form of transparent leaflets.

The amount of pectin varies considerably in different fruits, and this explains satisfactorily why it is impossible to obtain jellies from certain fruits by simple concentration of their juices.

In 1910 Miss N. E. Goldthwaite, an American woman, demonstrated practically the importance of pectin as the prime factor in jelly making. She made artificial jellies which were impossible to detect from the genuine by taste and appearance.

Pectin is closely related to pectose, which occurs in the intricate tissue of fruits and roots. Pectose is insoluble in water but is converted into soluble pectin on hydrolysis with dilute acids or alkalies, or by enzyme pectose. On ultimate hydrolysis pectose yields hexoses, to which group glucose and levulose, widely known sugars belong. The identification of hexoses derived from the hydrolysis of pectose awaits the attention of the research chemists. It is probable, however, that there is an intimate relation between pectose and cellulose, the last being the polymerization product of glucose.

Chemical researches for establishing the constitution of both compounds are not as easy as it may look for persons slightly acquainted with the intricacies of organic chemistry. It is going to take many years of careful investigation by the best chemists of the world before this problem will be solved.

Pectin can be extracted from the inner part of orange peels by boiling with dilute tartaric, or citric acid; this method renders, therefore, a cheap way of getting the substance, which helps our housewife and preserver in producing jellies from fruits, which ordinarily refuse to form jelly by evaporation to small bulk of their juices. It does not add anything deleterious to their taste and is far superior to gelatin for the same purpose.

### Retail Grocers Oppose Sales Tax at Washington

The Senate Finance Committee late last month concluded its hearings on the revenue laws having in mind their revision following the passage of the forthcoming permanent tariff law, now being framed by the House Ways and Means Committee. The hearings largely developed the opposition to the excess profits taxes and the higher surtaxes on incomes. The witnesses appearing before the Committee on these subjects advocated as a replacement levy a sales tax upon all goods, wares and merchandise sold in the United States.

Opposition to the sales tax was voiced by John Brayshaw, Jr., of Washington, D. C., on behalf of the National Association of Retail Grocers.



# FOOD CONTROL MATTERS

## Court Holds that Labels Should Be Clear to Public

An interesting decision regarding misleading canned goods labels was handed down recently by Judge Cushman in the United States District Court at Seattle. The opinion of the court indicated that the law implied that it was not enough for a canner to brand his goods so that the jobber and retailer should have no doubt about their content, but their labels should be perfectly clear to the general public.

The case in question involved eighty cases of Lionax brand medium red salmon and 1,379 cases of Northern brand pink salmon, both canned by the Northern Packing Company at Juneau, Alaska. A decision was rendered to the effect that the eighty cases of medium red salmon were misbranded in that they had the word "Coho" on the label in small type and also the word "Sockeye" in large type, the latter being only partially obliterated and hence likely to mislead the purchaser into thinking the cans contained Sockeye salmon when, as a matter of fact, they contained Coho.

The decision, in part, follows:

"So far as the misbranding is concerned, I hold with the Government. I think, according to the decisions which you read, that it is not whether the brand is going to deceive the jobbers and wholesalers and retailers and people who trade in these things, but whether it is liable to deceive the consuming public. I never heard of the word 'Cohoes' until this case began, and if I saw it on a can of salmon I was about to buy I would not know whether it referred to the canner or the fish or what it referred to. I have lived here almost thirty years and eaten canned salmon most of the time, so I presume I am an average specimen of the public. I take it everyone in this country is familiar with the word 'sockeye,' and finding it on a can of salmon not completely obliterated but with this fancy stamp on there, more or less ornamental, would tend to deceive. I think a purchaser going into a retail store to buy a can of salmon would reasonably conclude that that was intended to be a part of the label and might very easily be misled. The decree that is appropriate for forfeiture in that case will be prepared and submitted to the court."

In refusing to permit the Government to condemn the salmon for filth, the Court said:

"As regards the other lot of salmon, and so far as the eighty cases are concerned also, the court is inclined to agree with Judge Sessions, that where the Government asks for forfeiture—where the rule of strict construction obtains—the law should be brief and as clear as it is possible to make it. Now, salmon is an article of food, but because some cans of salmon are found to be putrid, does not warrant the entire salmon output being condemned. If a very small percentage of the contents of each can was filthy, even a very, very small portion of it, that would condemn the whole lot, but because part of the cans are found to be filthy and putrid, I am unable to conclude that the court would be warranted in condemning the entire lot of these cases of salmon.

"I find that instead of the entire output of this cannery having been subjected to conditions that caused this putrescence—this filth in certain of the cans—it is more reasonable to conclude that these old salmon that get into this pack were the salmon, as pointed out by the prosecutor, that they picked up locally when they were short of fish to complete the day's output or whatever reason there was, without knowing their age, and not those that they went out to the fishing grounds and got from the purse seiners. That being true, why, the output of the cannery for those days on which they purchased these old fish would contain putrid fish.

"If the Department wants to make rules that these salmon canners shall can and keep their cans separate, and put one day's pack up separate from another, and not

mix up the cans of the separate day's pack and thereby put themselves in the position to test and sample cases canned on a particular day when they might bring in a scowload of old fish, why, the public would be protected, and the commercial end of it would not be jeopardized by incurring the destruction of a large amount of fish that might have been canned on days when they were getting perfectly fresh fish.

This statute does not give the court any warrant or does not give the Department, so far as I see, any warrant to fix a proper percentage of filth.

"So far as health and comfort are concerned—that part of the law regarding misbranding is to prevent fraud being committed upon the consuming public—but the other part, keeping filth and putrescence out of it—is to protect the public in the matter of its comfort, if not health; and the more rotten the salmon was, the less liable you would be to eat it. It would seem to me in careful sampling, not only the cans should be marked, but the cases in which they were taken, and where a putrid can was found, there should be some further test made of that case, if I am right in my assumption that the cans that are canned on a particular day are liable to find themselves—liable to be put up in—limited to the cases in which they appear and are not scattered through the entire pack."

The Bureau of Chemistry has appealed the case to a higher court.

## Texas Food Department Turned Over to Health Officer

The Legislature of Texas has passed a bill abolishing the Dairy and Food Department and vesting all duties and functions of that department in the State Health Officer. The law as enacted is as follows.

Section 1. The office of Dairy and Food Commissioner of the State of Texas, and the Dairy and Food Department of the State are hereby abolished.

All the authority, powers, duties, functions, rights and liabilities vested in and conferred upon said Commissioner and said Department by Articles 4575 to 4595 inclusive of Chapter 6, Title 66 of the Revised Civil Statutes of Texas of 1911 as amended by Chapter 47 of the General Laws of the Thirty-second Legislature at its regular session in 1911, by chapter 125 of the General Laws passed by the Thirty-sixth Legislature at its regular session in 1919, by chapter 150 of the General Laws of the Thirty-sixth Legislature passed at its regular session in 1919 and by any other existing statute or law of the State of Texas, shall hereafter vest in, be had and performed by the State Health Officer of this State, and all laws relating to said Dairy and Food Commissioner and said Dairy and Food Department shall be administered under and through the State Health Department of this State.

All powers and authority heretofore conferred by law upon said Dairy and Food Commissioner and said Dairy and Food Department shall be exercised by the State Health Officer in accordance with the terms of such law or laws and this act.

Section 2. All appropriation heretofore made for the Dairy and Food Commissioner or the Dairy and Food Department, or the Pure Food and Drug Department, shall hereafter be available to the State Health Officer of this State, to be used by said State Health Officer in the performance and exercise of the duties, authority, powers and functions herein transferred; provided that the State Health Officer is hereby authorized to dispense with any employee not needed, after the consolidation herein authorized, and may rearrange the work and duties of the office to avoid any duplication of work.

Section 3. The fact that there are now too many departments in the State government, and the fact that the consolidation of the departments herein mentioned will con-



tribute to efficiency and economy, creates an emergency and an imperative public necessity demanding the suspension of the constitutional rule requiring bills to be read on three several days in each house, and said rule is hereby suspended, and that this act take effect and be in force from and after its passage, and it is as enacted. —Chapter 10, p. 14, General Laws, State of Texas.

The Texas Legislature has also adopted a bill regulating sanitation of bakeries and a bill providing for medical inspection for all employees of hotels, restaurants, dining cars and all other public eating places.

### Penalties for Misbranding Recovered in New York

Penalties aggregating \$1,000 for misbranding foods and beverages were recovered by New York State during March, according to a report by Dr. Eugene H. Porter, Commissioner of Foods and Markets. Soft drinks containing preservatives, the presence of which is not stated on the label, figure in the report.

Dr. Porter points to violations by dealers failing to brand the sales packages of various food commodities as required by law. Retailers are held responsible under the provisions of the law for failure to see that such commodities are properly branded, and the department recommends that manufacturers and retailers familiarize themselves with the requirements of the food laws. These definitions are published in "Foods and Markets" bulletin No. 27, copies of which may be had upon request.

### Spring Sampling of Food and Drinks in Pennsylvania Completed

The annual spring inspection of the Bureau of Foods of the Pennsylvania Department of Agriculture is rapidly nearing a close. More than 3,000 samples of milk, cream, ice-cream, soft drinks and confections have been taken and analyzed, agents of the bureau having visited every county in the State.

Particular attention was paid by the agents to the foods, beverages and confections that are widely offered for sale during the warm months. Approximately 5 per cent of the samples analyzed were found to be in violation of the pure food laws of the State and 150 prosecutions against the of-

fending dealers have been ordered. In practically every case the food or drinks found adulterated were locally manufactured products, the products of nationally known manufacturers having been found to comply with the law.

In Pittsburgh, Scranton, Philadelphia and Delaware counties many samples of hamburger steak colored and preserved with chemicals were found and in all instances the dealers offering the meat for sale were prosecuted. Chocolate-covered cherries containing sulphur dioxide were also found, while several samples of sponge-cake, colored yellow with coal tar products were found.

Generally speaking, however, the number of law violations uncovered were smaller than in previous years, according to Director James Foust of the Bureau of Foods, in charge of the investigations.

### Watered Butter Prosecutions Made Under New Act

With the watered butter bill in effect in Pennsylvania less than one month, eighteen prosecutions have already been entered by the agents of the Bureau of Foods, Pennsylvania Department of Agriculture. The offenders in every case were concerns located largely in the Philadelphia section.

The act provides that butter shall not contain more than 16 per cent of water. Butter made on the farm shall not contain more than 16 per cent of water. Butter made on the farm contains on an average of 14 per cent of water, and in many many cases no more than 12 per cent.

Of the samples examined by chemists of the Bureau of Foods one was found to contain more than 37 per cent of water. One sample taken in Altoona, Blair County, was the product of a middle-west creamery, the remainder of the samples coming from the Pennsylvania creameries.

Agents of the Bureau of Foods have found similar butter frauds for several years past, but until the Legislature passed the act covering the cases, the Bureau was without adequate machinery for curbing the practice. It has been found that some creamery operators have been adding great amounts of water, or milk without butter-fat, to their butter, the consumer paying for the water under the impression that he was buying butter-fat.

# FOOD LEGISLATION

### Canadian Law Affects Oleomargarine Exporters

The attention of exporters of oleomargarine is called to the Canadian law which provides that this product must be sold in its original package only. The rulings regulating the sale of oleomargarine in the Dominion follow:

No person shall sell, offer, expose or have in possession for sale in Canada any oleomargarine manufactured wholly from vegetable oils unless it is so designated upon all labels, brands or other markings.

No person shall manufacture, import into Canada, or shall sell, offer, expose or have in possession for sale any oleomargarine unless the word "oleo" is stamped on the surface of the oleomargarine in capital block letters at least one and one-half inches high and of proportional width.

No person shall sell, offer, expose or have in possession for sale in Canada any oleomargarine unless it is contained in:

(a) The original package which shall bear the official inspection mark of the country of origin, together with the name and address of the manufacturer; or,

(b) A small package wrapper separately having on the label or wrapper the word "Oleomargarine" printed or marked so as to form the most conspicuous word on the label or wrapper, as well as bearing the official inspection mark of the country of origin, together with the name and address of the manufacturer.

No person shall sell, offer, expose or have in his possession for sale any oleomargarine moulded or cut into prints or blocks unless such prints or blocks are of full net weight of one-half pound or one pound.

### License Required to Handle Farm Produce on Commission

Every person, firm, exchange, association or corporation in New York State receiving, selling or offering for sale farm produce on commission is required annually to obtain a license under Article 12-A of the agricultural law, and notices to that effect were sent out by Dr. Eugene H. Porter, Commissioner of Foods and Markets. More than six hundred commission men are licensed and bonded under the statute.

Each commission merchant is required to make an application and furnish a bond in the sum of \$3,000 before a license is issued. The purpose of this law is for the protection of farmers and shippers consigning farm produce to the city markets in the State. The State obtains a revenue of approximately \$6,000 from this source, the license fee being \$10 in each case.

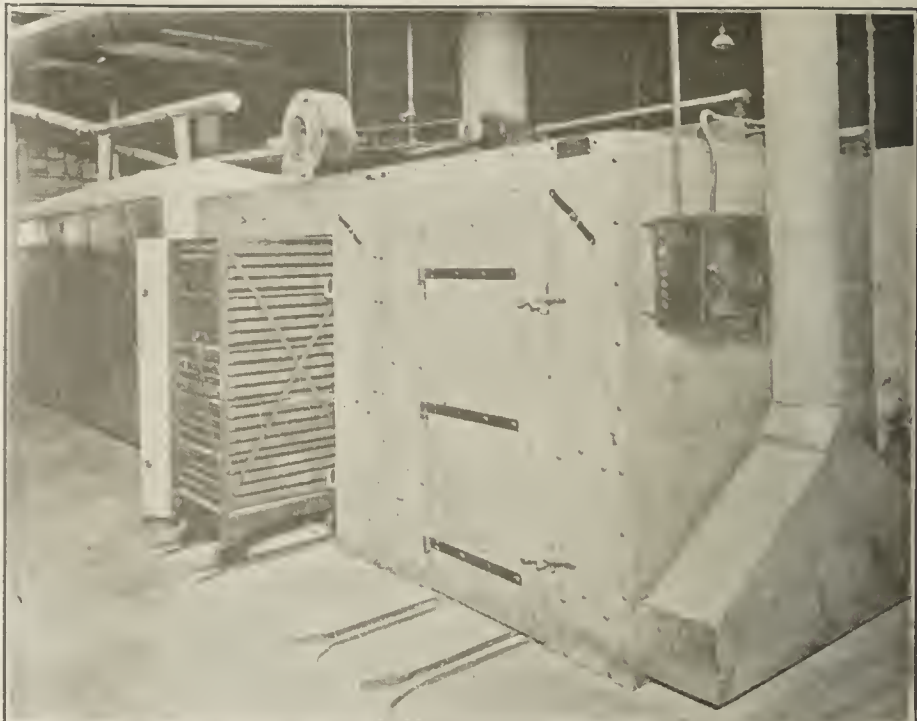
The Bureau of Licenses of the Department of Farms and Markets has charge of the enforcement of the provisions of this law.



# MACHINERY AND EQUIPMENT



Atmospheric tray-type compartment dryer, which dehydrate a variety of products



A view of a date steam showing loaded truck with packages of dates

## Process and Equipment Used in Fruit and Vegetable Dehydration

By JEROME D. STEIN

Chemical Engineer, Dryer Division, Grinnell Company, Inc.

DEHYDRATION, though in the early stage of development, is successful for drying practically all kinds of fruits and vegetables. Prepared fruits or vegetables are spread thinly on trays of wood or wire cloth, and are air dried usually in steam heated chambers. The trays may be loaded on trucks which are run into the dryer. Fans or blowers move the air at such velocities that the material is neither blown nor dusted off the trays. No bad effects result from the use of galvanized wire cloth, if the product is dried quickly, as in modern dehydrators. Germany is now using products dried on metal trays in her own plants.

An automatic conveyor belt arrangement, instead of stationary trays, is a modern development, but has only been successfully applied to such materials as are dried in a very short period.

Modern engineering principles are applied, recirculating and reheating the air during each cycle to maintain uniform temperature throughout the whole apparatus. The air is used over again until such a point of partial saturation is reached, that in exceeding this point the drying time is unduly lengthened in proportion to the saving of heat. The partially saturated air is continuously exhausted either by an exhauster fan or natural draft to the atmosphere, and an equal amount of fresh pre-heated air continuously admitted at the material discharge end of the apparatus, this fresh air passing over the most dry material first. The exhaust air is never permitted to become absolutely saturated, as there would be danger of redepositing moisture on the material before it is exhausted. Automatic and recording temperature and humidity control devices are supplied and air velocities carefully regulated for each particular product. This type of apparatus produces uniformly dried products with low expenditure of fuel and power.

Drying reduces fresh vegetables and fruits from one-fifth to one-tenth of their original weight, and from one-third to one-half of their original bulk. This means great economy in both space and cost of transportation. Drying also solves the problem of getting suitable containers, for the dried food products keep well in a paraffined or parchment lined pasteboard containers.

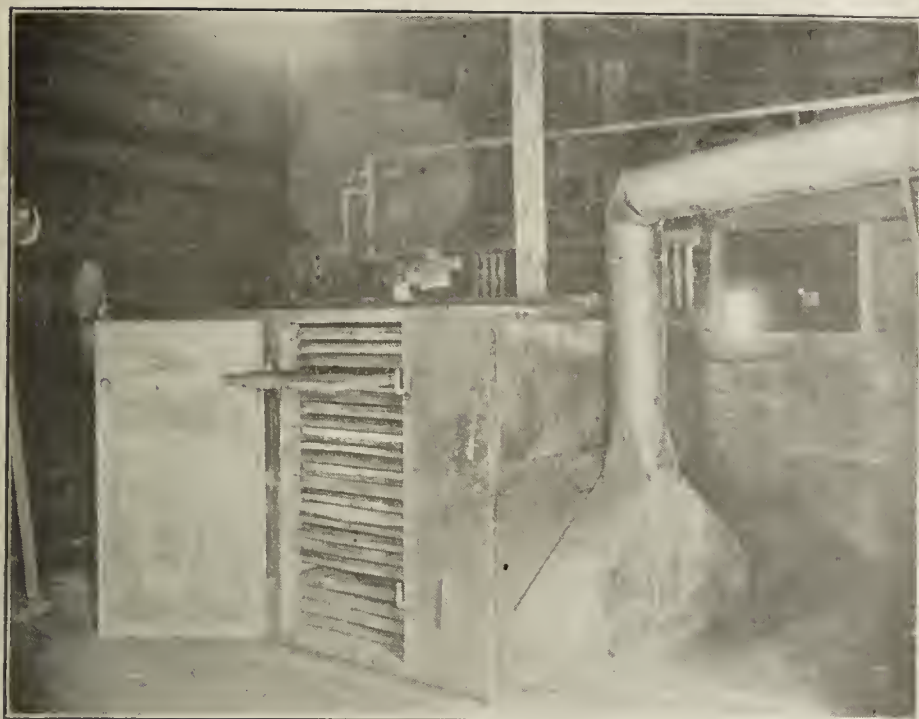
The following list gives the water content and the amount yielded by fresh fruits and vegetables:

	Percentage of Water in Product	Pounds of dried product from 100 lbs. fresh produce.
Tomatoes .....	94.3	8.5
Celery .....	94.0	7.0
Spinach .....	92.0	7.5
Cabbage .....	91.0	8.0
Carrots .....	88.0	10.0
Onions .....	87.0	8.5
Squash .....	86.0	6.0
Apples .....	84.6	15.0
Potatoes .....	78.3	22.0
Sweet corn .....	75.4	21.0

The production turned out by a modern atmospheric truck tunnel or tray compartment type of dryer is free from discoloration and retains its natural color and aroma. Strawberries, raspberries and similar fruits have been dried and the dehydrated product retained all its essence. There is no danger of caramelizing the sugar in any of these products if drying is accomplished around a temperature of 150 degrees Fahrenheit. Onions are dried every day without any danger of losing any of the volatile oils or aroma, and without discoloration.

In the class of atmospheric fruit and vegetable dryers manufactured by our company, you can safely figure that potatoes, string beans, cabbage, peas, cauliflower, artichokes, celery, oranges, lemons, bananas, cocoanut, and peppers can be dried in two to four hours. Onions take a little longer to dry as they are the most delicate of all vegetables on account of the volatile oils contained in them. Figs require a little longer than any of the fruits mentioned, the time depending on the size and shape of the fig. Some figs require 12 hours and others take as high as forty-eight hours to dry. Plums and cherries, when split, and with stones removed dry in 12 to 24 hours. The cellular struc-





**Atmospheric truck-type dryer**

ture of the dried product is always left intact, and therefore 5 to 25 per cent of its water content is retained.

Our company maintains research laboratories in charge of competent chemists and operators, where samples of nearly every fruit and vegetable occurring in nature have been dried. As a result of these exhaustive tests, we are in a position to recommend that specific equipment most efficient as to operation, fuel and power consumption for each class and quantity production, which will turn out the product uniformly dried and of the highest quality. It may be of interest to note here that we have shipped dehydrators to a great many foreign countries, including France, England, Italy, Hawaii, Philippine Islands, and several of the South American countries.

The following descriptions are given of a few processes in commercial operation:

#### **Apples**

From storage bins apples are conveyed on endless belts to work tables, where they are pared and cored by girls on hand or power driven machines. The pared fruit is passed to other workers, who trim off any traces of peeling, bruised spots or other defects. The apples are dropped on the second endless belt by these workers, and go to the slicing machine, which cuts each cross-wise into rings 1-8 to 1-4 inch thick. The product is now ready to be dried, and is spread 1-2 to 1 inch deep on trays, which may be loaded onto trucks. Usually it is unnecessary to bleach with sulphur when using a modern dehydrator, but instead the pared fruit is sliced in a 5 to 10 per cent salt water solution. The drying of apples in an efficient modern truck tunnel or compartment dryer requires from three to eight hours.

Average winter apples turn out six to eight pounds of evaporated product to the bushel. Waste is composed of parings, trimmings and cores, and is usually handled in a separate dehydrator or kiln where it is bleached by burning sulphur. Chops are made from apples too small to handle on paring machines and this waste material is used in the manufacture of vinegar and jelly.

The average cost of evaporating apples, as estimated for seasons of 1915 and 1916, range between 12 and 20 cents a bushel. The price received for the finished product varied from 6½ to 11 cents per pound, depending upon the grade of the finished product, of which five grades are now listed on the market.

Evaporated apples are ordinarily packed in wooden boxes holding 50 pounds each. Extra fancy grades are often packed in one-pound cartons. Winter apples are said to be preferable to summer varieties for dehydrating.

#### **Prunes**

Any variety of plum which can be successfully cured without removing the pit is called a prune. Only those

varieties which have a large production of solids, and sugar in particular, are considered good prunes.

The prune industry was started in the Eastern United States in 1854, but failed because climatic conditions were not favorable for the production of the desired qualities. About 1863 the industry started in California and grew rapidly. In 1880 the output had reached 200,000 pounds annually, and in 1910, 150,000,000 pounds, of which nearly one-half was exported, thus developing in about 40 years with an annual output greater than that of France, hitherto the chief prune-producing nation of the world. Oregon, Washington and Idaho also grow good prunes, as do Servia, Bosnia, Germany, Spain, Australia and South Africa. The value of prunes exported from the United States in 1914 was \$4,662,000.

Prunes are cured in two ways in the United States. Sun drying is the common and most economical way where climatic conditions will admit as in California. The prunes are not picked until ready to fall, when they are gathered, graded and dipped in hot lye and run through a pricking machine made of a vibrating wire mesh screen with thousands of needle points projecting through the mesh. After this they are spread on boards or wire bottomed frames and put out to dry, an operation which takes from eight to twelve days, depending on the variety, the size of the plum and the weather.

The other and more modern drying method is effected by fire heat. In this operation great care and skill are necessary, as too hot a fire will cause the fruit to burst, drip and finally shrivel. After being run through the pricking machine, the fruit is spread on wire mesh trays, which are loaded onto trucks and these are pulled through tunnel dryers, by means of detachable endless link chains. Indirectly heated air is used for drying and is obtained by being passed over steam heated coils or metal flues through which the combustion gases from wood, coal or oil furnaces pass. The air is usually recirculated. Thermostats control the temperature of the air and humidity control is affected with standard hygrometer apparatus. Air volume and velocity are carefully regulated under technical control. When properly handled in an apparatus such as this, and under scientific control, the dried product is superior to the sun-dried prune, and only requires 12 to 24 hours for dehydration.

#### **Raisins**

Raisins are the dried fruit of the grape. Raisin grapes are usually the product of warm climates and contain from



**Special date steamer, used for steaming dates put up in small oiled-paper containers**



28 to 30 percent of sugar. They are, for the most part, dried in the sun, and as this requires several weeks of practically rainless weather, the areas of commercial culture are limited to a few countries about the Mediterranean Sea, South Australia and to Southern California and Chile.

The raisin industry in California has developed rapidly. In 1912 the production was 190,000,000 pounds. In the sun-curing of standards raisins in California, the bunches of grapes are picked by the stems and, all imperfect berries, dirt, etc., having been removed, laid in trays slightly raised so as to incline towards the sun. When about two-thirds dry, which will be at the end of six to eight days, they are turned by placing an empty tray over the filled one and inverting both. The upper and original tray is then removed, and the grapes exposed four or five days longer before further drying. At the end of this time the grapes are stored and put through a sweating process of from 15 to 20 days, when they are ready for packing. Many concerns are now entirely drying their products in the tunnel truck type dehydrators, similar in construction to those described for prune drying. A better and more uniformly dried product is obtained, requiring a day or less for the drying process.

Another method of curing is to dip the ripened bunches, after being partially sun-dried on the vine, into a hot solution of potash lye, to which has been added a little salt and olive oil. This method is mostly practiced in Europe and Asia Minor. Some of the best raisins of commerce are thus treated.

#### Dehydrated Potatoes and Potato Flour

Several complete small-sized potato-flour plants were recently sold abroad, of which the following is a brief description: Potatoes are first washed, peeled, sliced, dried, producing dehydrated potatoes, ground and sifted, giving a high grade potato-flour product.

The drying apparatus specified contained 100 sq. ft. of effective drying surface and was of the cabinet atmospheric "booster" tray type. Two hours was the average time for drying and over a 12-hour dry six charges were obtained. One pound of sliced potatoes per sq. ft. of drying surface, 1 inch deep, was the average load. Or in other words, the dryer had a capacity of 600 pounds of potatoes, containing about 80 percent moisture and resulting in a production of 120 pounds of dehydrated product per day. If the apparatus were run day and night the production could be doubled.

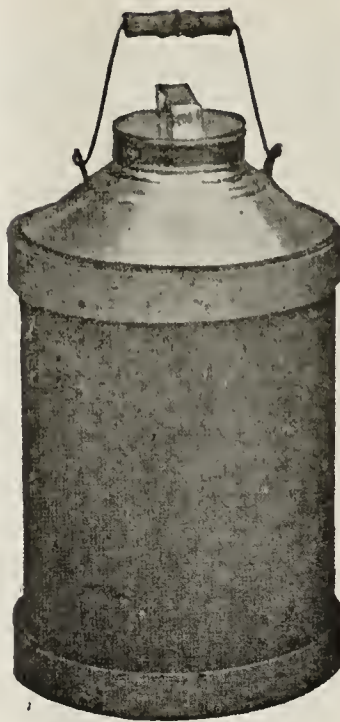
The complete installation contained one peeling machine of ample capacity for peeling the quantity of potatoes necessary, the machine being mechanically operated and requiring a one-third horsepower motor operating 1200 to 1800 r.p.m. Hand-operated slicers were also supplied.

The atmospheric dryer as offered included the dryer with heating coils, valves, thermometers, fan, complete with one set of 20 trays and an extra spare set of the same number, so that while one set was being made ready for the next charge the other set was in use in the dryer.

One upright steam boiler was offered with injector of ample capacity for generating sufficient steam for the drying apparatus, complete with all necessary fittings, mountings and auxiliaries and designed to operate at pressures up to 60 pounds, fitted with a grate for coal or wood fire. A set of interconnecting pipes and valves between the boiler and the dryer was also necessary.

When potato-flour was to be produced, a combination grinder for grinding and sifting the dehydrated potatoes to a fine potato-flour was offered, having a capacity for handling 120 pounds of dehydrated potatoes produced by the dryer. The grinding could be done at a maximum of 30 to 60 minutes. The unit was furnished for motor drive, requiring a 2 h.p. motor, operating at 1800 r.p.m.

To make the plant complete a tub for washing the potatoes, and a tub for blanching them must be added. In



Forty pounds of water in the container at the left represents the water extracted from the hamper of dried sweet potatoes shown at the right

either case a small wooden cask or wooden wash tub would serve the purpose. As a matter of information, a peeler is not usually installed when potatoes are being dried for manufacturing potato-flour.

#### Summary

The preceding description of standard methods and equipment used is only given as examples of some of the most successful and important dehydration processes in use in this country and abroad. There are many other products being dried with more or less commercial success, but an attempt to fully describe all these would demand a considerable treatise, far beyond the scope of this article.

#### Household Dehydrators to Be Placed on Market

The Dehydrator Corporation, a new company organized by interests affiliated with Miller Reese Hutchison, Inc., industrial engineers, Woolworth Building, New York City, has purchased the patents and rights to manufacture a domestic dehydrator formerly owned by the Nichols Dehydrator Company. The Dehydrator Corporation will manufacture a domestic dehydrator in two sizes, the smaller one having twelve trays with total capacity of twelve quarts of berries or shelled beans, peas or other vegetables. The larger dehydrator will be five times the size of the smaller one. One will sell for \$25 and the other for \$150. The smaller one is designed for household use, and the larger one for farmers and fruit growers. The Dehydrator Corporation will open an office and experimental laboratory at 489 Fifth Avenue, New York City. J. B. Short, sales manager Whitehead & Hoag Company, Newark, N. J., is president, and George McComb is sales manager of the new company.

#### Beverage Bill Before the Florida Legislature

The Florida Legislature is to be given the opportunity to act on a bill prohibiting the sale of any misbranded beverage, and the bill defines "misbranded beverage" as follows:

"Any beverage, drink, or potable liquid is hereby defined to be a 'misbranded beverage' if it consists in whole or in part of a synthetic mixture and

(a) When sold, offered, or exposed for sale in a bottle, can, cask, keg or other container, said container bears any statement, design or device indicative of the name of any fruit or of the natural juice, or extract thereof; or

(b) When served to patrons, customers, boarders, or inmates, of any hotel, dwelling house, restaurant, public conveyance, boarding house, or any other place where a beverage, drink or potable liquid is sold or offered or exposed for sale, or where it is mentioned on the menu card, or similar notice or placard under a name indicative of the name of any fruit, or of the natural juice or extract thereof."



# NEWS OF THE FOOD TRADE

## United States Large Importer of Meats

### New Zealand Lamb Is Principal Article Brought in from Abroad

Although the United States is the greatest meat producing country in the world, 160,000,000 pounds of meat of all kinds were imported last year, about two-thirds of which was New Zealand lamb. While meat imports of last year show an increase over the preceding year they do not establish a record, as the imports for 1914 were 323,000,000 pounds.

The principal kinds of meat which the United States has been receiving lately from foreign countries are fresh frozen beef, fresh frozen mutton, canned corned beef, veal, sausage, beef extract and fancy meat food products. Such products include pate de foie gras, liver paste and truffles, mortadella and salami sausage, brawn, etc.

The fresh beef and mutton arrive principally in frozen condition, though some chilled beef is received. The beef usually is heavy, well marbled and of very good quality.

As many as 100,000 lamb and mutton carcasses arrive on a single steamer from Australia and New Zealand. The lambs are quite uniform and of good quality.

Very little fresh frozen beef and mutton have been received from Argentina and Uruguay during the past few years, due to the European demand and the scarcity of steamers equipped with refrigeration.

Practically all of the imported dried beef comes from Uruguay. This is a product peculiar to that country and Argentina, large quantities of which are consumed by their own people.

All kinds of meat and meat food products are imported from Canada. Such products are shipped to this country by rail. The quality is good.

Since 1918 importations from England, France, Italy, Denmark and Spain have been gradually increasing. Meats from these countries, however, have little effect on the meat market of this country as the shipments are small. Canned beef and beef canned with mushrooms are received from Japan, but in very small quantities, and are used exclusively by Japanese residents.

Chinese meats consist of hams and sausage. The hams are cured in a manner similar to ours, have a peculiar odor, are small, and of poor quality, judged by American tastes. The sausage is prepared from pork, and is about the size of a thin frankfurter, is hard and oily, and has an odor pronounced unpleasant to the Occidental nose. These products are consumed exclusively by the Chinese.

Meats from foreign sources must, before admission to this country, comply with essentially the same regulations as domestic meats that are shipped interstate. The foreign certificate, though giving the importer permission to have a product inspected, does not entitle him to formal entry of meat. Actual entry depends upon the result of inspection made by inspectors of the Department of Agriculture when the product arrives in this country.

This inspection consists in checking the meat with the foreign meat inspection certificate for the purpose of

identifying the product, after which a thorough physical as well as laboratory examination is made, and if no disease or condition which renders the product unfit for human food is found it is marked "United States Inspected and Passed" and permitted entry.

Meats which are refused entry on account of not complying with the Federal meat inspection regulations are either exported or rendered unsuitable for food purposes.

### Claims County Agents Oppose Use of Oleomargarine

J. S. Abbott, secretary of the Institute of Independent Margarin Manufacturers, Munsey Building, Washington, D. C., has written a letter to the Secretary of Agriculture calling attention to a newspaper item from the Monticello (Wis.) "Messenger," which alleges that the County Agent of Barron County, Wisconsin, is supplying circulars to the women of Comstock for their signatures, pledging themselves not to use oleomargarine and to do all in their power to urge their neighbors and friends to follow their example.

In his letter to the Secretary of Agriculture, Mr. Abbott says:

"Several months ago I called the attention of your Department to the activities of another County Agent against oleomargarine. Many other reports of this nature have been brought to my attention.

"It is my understanding that these County Agents throughout the United States are financed in whole or in part by State and Federal appropriations and that the Federal funds are handled by your Department. On behalf of the members of this Institute whose total oleomargarine production is approximately 150,000,000 pounds, and whose special Federal taxes on it are approximately \$1,000,000 per annum, I respectfully protest against the activities of the County Agricultural Agents connected with your Department to effect any such boycott against oleomargarine, a useful and necessary consumable commodity made of the products of American agriculture."

### Packing of Prepared Flours for Shipment to Argentina

One of the largest importers of American foodstuffs in Buenos Aires complains to the United States Trade Commissioner that he is frequently in receipt of consignments of prepared flours that have deteriorated in transit there. This condition is due to improper packing in thin paper boxes unsuited to withstand the long journey through the Tropics. All prepared flour for sale in Argentina, such as pancake preparations and self-raising flour should be packed in tightly sealed packages preferably covered with paraffine paper, since insects bore through the cardboard boxes. This wrapping is also desirable for rolled oats and breakfast foods.

Investigation shows that some of these shipments came through jobbing houses in New York, and the manufacturers probably were unaware that their goods were to be shipped to Argentina. To protect the manufacturer from blame in cases of this kind, it is suggested that the boxes used for domestic packing should have printed on the sides, "This box not intended for export."

Argentina imports about 500 metric tons of prepared flours yearly besides rolled oats and meals.

## Silesia Is Important Sugar Country

### Poland's Industry Would Expand Further if Decision Is in Its Favor

Poland's sugar industry, already expanded with the repartitioning of Europe, would receive added impetus, should the Silesian issue, now in dispute, be decided in its favor.

This territory, which looms up large in the present international situation, involves territory rich in beet sugar. The province of Silesia, before the war, contained 47 beet sugar factories with an annual output of about 250,000 tons. In 1920, 42 factories turned out 211,607 tons.

The acquisition of the disputed territory, which holds a considerable number of these factories, would add materially to the sugar holdings which Poland has obtained since the war.

Posen, most of which is now in the Polish republic, had a pre-war production of 350,000 tons annually. Under the provisions of the recent peace treaty with the Russian Bolshevik Government, according to the Deutsche Zuckerindustrie, Poland came into possession of four sugar factories and one large refinery in Volhynia, about one half of which has been added to Poland by this pact.

Of the four factories, Babino-Tomachowka was built in the first year of the Great War. Karwice-Ozierany, Korez and Schonow, the remaining factories, date back to earlier days, along with the refinery, Zytyn.

The aggregate capacity represented by the sugar holdings which have been added to Poland by the Russian treaty is about 20,000 tons of sugar annually. The plants, however, have not been working regularly for several years.

The development of Poland as an entity in the world sugar situation has been almost parallel with the decline of Russia.

Once the second largest producer of beet sugar, Russia seems to have fallen so far that it is no longer a factor in the sugar market. Recent reports of the anti-Soviet uprising feature the high price of sugar as one of the elements which have created unrest. So stringent is the scarcity that a pound of sugar, which cost 7,000 rubles in December now commands 15,000 rubles. At normal rates of exchange, it is estimated, a pound of sugar would cost \$7,500 in Russia today.

At one time Russia was able to produce 2,000,000 tons in a year, an output which made exports possible. The largest total export recorded for Russia is 570,000 tons in 1911-12. The largest amount exported to the United States was 15,000 tons in 1900-01.

The war ruined the Russian sugar industry and the revolution completed the wreckage. The loss of Poland was a heavy blow, for some of the richest sugar lands were in that province, but the disorganization of the industrial structure was even more disastrous.

Recent clippings from a Bolshevik newspaper tell the story. The peasants pillaged the plantations and divided up the estates among themselves. Systematic operation of sugar mills became impossible. Even when an attempt was made to put factories on a paying basis,



the difficulties were almost insuperable. Materials and wages were high. Transportation was hard to obtain and insecure. Seed, cattle and manure were scarce. Tools were not at hand and bags were not to be found. Even where plants were in relatively good condition, the machinery had depreciated hopelessly and replacements and improvements were impossible.

The Soviet authorities have named a Chief Sugar Administrator to take charge of the industry. Yet the beet crop for 1920, according to European authorities is estimated at not more than about 50,000 tons.

Russia's per capita consumption annually ranged up to about 24 pounds a few years ago. Today it would be difficult to work out a per capita figure for the nation. Imports are insignificant, and at best there will be only a pound or two for each of the 100,000,000 inhabitants.

### Demand for Flour Mill Machinery in Argentina

As Argentina is one of the principal producers of wheat and corn in the world, grinding mills are to be found throughout the country which entirely satisfy the home demand for flour and corn meal. In the province of Buenos Aires alone, there are 120 mills, while it is said there are more than 400 in the entire Republic having a total production valued at \$65,000,000 a year.

In the larger cities there are mills assuming proportions that compare favorably with those in other parts of the world; however, in the interior villages there are a great number of individual mills producing a few hundred pounds of flour a day. Many of the latter are imported, although an increasing number are being made in the country. In either case they give rise to a demand for perforated metal sheets or woven-wire cloth suitable for such operations as cleaning the grain and sifting the flour. Silk bolting cloth is likewise employed in quantities for the latter purpose.

Cotton bags are needed for transporting the flour and attempts have been made recently to introduce the jute paper bag familiar in the retail grocery stores of the United States. The success of the latter seems to be limited by the fact that very few families do any of their own cake or bread baking and the flour is therefore almost exclusively an article of the wholesale trade.

Other items which are in fairly constant demand are bucket elevators and parts, conveyor belts, and the grinding rolls or stones.

#### The 1921 Red Book

The twenty-seventh annual edition of the Orrin Thacker directory of wholesale grocers, semi-jobbers, chain stores, etc., has recently been published. In this new edition are listed over six thousand names, including nearly 4,600 wholesale grocers in the United States and Canada and 1,449 semi-jobbers chain stores, etc. A tabulation in this Red Book shows the number of names listed in each state. Population of states and cities is given, and the county in which each city is located is designated.

The Red Book is published by the Orrin Thacker Directory, 33 West Gay Street, Columbus, Ohio, and sells for \$2.00 the copy, postpaid.

#### Start New Altoona Grocery Building

Work has been started on the new \$60,000 building, which is to be constructed for the Altoona Wholesale Grocery Company, R. W. Nash, president, at 804-6 Green avenue, Altoona, Pa. It is planned to complete it as soon as possible as the company is cramped for space in its present quarters.

## Few Increases Over March Noted in April Food Exports

### Lard Exports Have Picked Up Tremendously—Condensed Milks Show a Decrease

Only in a few instances have the exports for April exceeded the amounts recorded for March, 1921. Flour exports for April amount to 1,591,095 barrels worth \$11,491,877, compared to the preceding month, when they were 1,369,980 barrels, worth \$10,171,513.

In March of this year, 508,230 pounds of fresh beef were sent out of the country, and less than half the amount, 214,193 pounds were exported in April. Pickled beef exports in March, 1921, were worth \$311,510, while for April the value was set at \$170,016.

April, 1921, saw 12,219,737 pounds of oleo oil exported, an increase over the 8,348,238 pounds for March.

By Groups:		April	1920	1921
Breadstuffs	dollars	55,893,951	940,582,069	627,521,274
Cottonseed oil	pounds	19,474,636	250,158,143	136,472,079
	dollars	4,511,316	28,955,206	31,057,003
Meat & dairy products	dollars	40,814,013	357,416,363	671,163,633
By Principal Articles:		April	1920	1921
Barley	bushels	887,001	18,627,320	25,479,508
	dollars	1,575,480	23,744,016	39,326,042
Corn	bushels	1,147,032	46,541,570	12,861,515
	dollars	1,955,384	44,566,589	20,779,053
Oats	bushels	1,393,703	3,922,885	31,840,935
	dollars	1,494,397	3,523,619	27,840,854
Rye	bushels	4,832,614	41,311,671	21,014,173
	dollars	9,691,879	85,720,393	38,178,685
Wheat	bushels	4,175,876	242,089,305	98,720,760
	dollars	10,674,153	608,821,173	238,202,886
Flour	barrels	2,121,266	13,372,435	16,333,889
	dollars	23,692,642	134,594,279	181,227,438
Beef, canned	pounds	1,606,613	10,272,200	18,402,699
	dollars	524,588	2,382,373	6,621,007
Beef, fresh	pounds	17,687,306	20,754,319	136,729,940
	dollars	3,637,800	3,639,585	29,571,875
Beef, pickled, etc.	pounds	2,241,460	19,457,537	26,763,350
	dollars	327,918	2,590,794	5,112,704
Oleo oil	pounds	7,704,030	83,317,541	59,901,085
	dollars	2,082,833	13,034,037	17,631,812
Bacon	pounds	24,356,170	415,823,765	692,523,594
	dollars	5,727,783	92,097,331	206,384,698
Hams and shoulders	pounds	15,640,236	137,966,258	236,282,078
	dollars	4,188,448	33,470,678	72,062,620
Lard	pounds	40,758,401	629,897,185	486,610,549
	dollars	10,106,750	118,191,022	148,950,637
Neutral lard	pounds	2,938,177	17,603,899	16,499,840
	dollars	733,556	3,608,835	5,236,188
Pork, pickled	pounds	2,734,335	27,472,680	33,901,813
	dollars	595,886	4,673,194	8,060,272
Lard compounds	pounds	2,270,632	32,873,177	36,824,285
	dollars	584,934	5,217,038	10,107,397
Milk, condensed	pounds	51,617,052	234,741,732	620,136,033
	dollars	7,451,627	36,633,166	91,219,584

### Biscuit and Cracker Manufacturers Meet

The Biscuit and Cracker Manufacturers' Association of America held its twenty-first annual convention at Hotel Traymore, Atlantic City, on May 30, 31 and June 1.

The convention favorably considered a proposal for a national advertising campaign involving an outlay of \$300,000, which is to be raised by an assessment against the members based on the number of ovens each one operates.

The association went on record in favor of the open shop and favored a reduction in railroad freight rates.

Plans for a model bakery for the scientific education of bakers were also discussed.

One of the principal speakers was Dr. Alonzo E. Taylor, who discussed the importance of cereals as a part of the diet. Dr. David Wesson of the Southern Cotton Oil Company discussed the use of vegetable oils in biscuits. Brooks Morgan, Atlanta, Georgia, who was unanimously re-elected president, advocated the adoption of a sales tax to take the place of the present excess profit tax.

### Mrs. Leona A. Krag Leaves Armour & Company

Mrs. Leona A. Krag, who has been with Armour & Company for more than six years, and is nationally known under her professional name, Jean Prescott Adams, has resigned her position with Armour & Company, Chicago. Mrs. Krag is a recognized writer and authority on all food subjects, as well as a successful advertising woman. She created and developed the Armour department of food economics. Mrs. Krag has been re-elected president of the Illinois Women's Athletic Club, 820 Tower Court, Chicago, and is resigning that honorary office to become the business manager of this well known organization, developing the last financial plans, preparatory to the erection of a \$1,000,000 building.

### Another Complaint Against Combination Lots of Groceries

The Federal Trade Commission has cited the National Products Company, Chicago, in complaint of unfair competition in the grocery trade. The complaint is directed to the combination lot method of selling groceries, as followed by this company.



## Need of Government Research Work Emphasized at Oil Chemists' Meeting

Congress Remiss in Providing appropriations for such work, it is stated

The twelfth annual convention of the American Oil Chemists' Society, held at the Congress Hotel in Chicago, May 16 and 17, was the best-attended in the history of the organization.

With new members taken in during the convention the membership of the society at this time is 263. More than one hundred of this number registered during the convention and fully two hundred were present to hear Dr. C. L. Alsberg, chief of the Bureau of Chemistry, and Robert H. Kerr, of the Bureau of Animal Industry, in the afternoon of the second day's session.

The addresses of the two Government experts seemed to arouse the most popular interest but the technical discussions of various topics of practical interest to the members gave added value to the meeting.

Officers were elected as follows: President, C. B. Cluff; vice president, L. M. Tolman; secretary-treasurer, Thomas B. Caldwell.

The nominating committee had suggested only the name of C. B. Cluff, of the American Cotton Oil Company, of New York, for president, but H. B. Battle was nominated along with Mr. Tolman, of Wilson & Company, Chicago, for vice-president and R. H. Fash was named to run against the able incumbent of the office for secretary-treasurer. The vote for vice-president and secretary-treasurer was by secret ballot.

L. M. Tolman, the newly elected vice-president, as chairman of the oil constant committee, reported great difficulty in securing authentic samples of peanut and cocoanut oil for the purpose of establishing standards. He considered it desirable, however, to continue the work another year in order, if possible, to get a large collection of authentic samples for Dr. G. S. Jamieson of the Bureau of Chemistry. In a discussion which followed it was suggested by H. J. Morrison, of Proctor & Gamble, that the name of the committee should be changed to oil characteristics as there actually are no constants. Dr. Jamieson, who was present, supplemented Mr. Tolman's plea for samples to be sent to his bureau.

W. D. Richardson, of Swift & Company, took an active part in the discussion of the report by Chairman E. R. Barrow of the sampling committee and of the address of Robert H. Kerr, of the Bureau of Animal Industry.

Dr. C. S. Alsberg, chief of the U. S. Bureau of Chemistry, had been assigned the topic "The Organization of Research in the Federal Service." In his preliminary remarks he gave the impression that the prevalent notion as to the amount of shifting and readjustment of bureaus and departments of scientific work at Washington was somewhat exaggerated. At the start he laid down some of the principles which he felt should prevail in any proposed reorganization in order that improvement rather than the reverse, should result. He then explained the nature of such research as is now carried on at Washington. Congress, he stated, appropriates no money for general or fundamental research, but only for specific purposes where actual and quick results may be evaluated. This, in Dr. Alsberg's opinion, is wrong. Fundamental research carried on continuously over long periods of time should be the governing principle and in the long run would bring by far the greatest results. Our Government, he maintained, is the

only organization, big, rich and permanent enough to carry through such a program on an adequate scale. Nothing of the kind is being done, except in a limited way by some of the universities and scientific foundations. The Government chemist said it was comparatively easy to go before Congress and get an appropriation for extracting sirup from sweet potatoes, but practically impossible to obtain any money for research in thermo-dynamics. Taking conditions as they are, his feeling was any attempted changes should be along the general lines of industrial rather than university laboratories. He did not take much stock in the clamor about overlapping and duplication of work. All scientific work of the Government could no more be centered in one department than could all stenographic or cleaning work. The endeavor should be, however, to group together so far as possible all work having to do with the production, use, standardization and distribution of any commodity, say, for example, canned goods.

Referring toward the end of his address to the Food and Drug Act, Dr. Alsberg said he had quite changed his views since taking office eight or nine years ago. Then he thought the act a handicap but now he realized it was constructive. Any such law he added should be administered by the department of government most conversant with the conditions which were to be regulated. Such hostility as exists toward chemical or other scientific research by the Government he felt would be dispelled by the adoption of the principle of fundamental rather than specific research.

"Rancidity, Its Cause and Prevention" was the topic assigned to Robert H. Kerr, of the Bureau of Animal Industry. To give some idea of the work of his bureau, Mr. Kerr stated that it supervised the production of more than 2,000,000,000 pounds of oleomargarine. He told of the general methods pursued, how many of the causes of rancidity had been found and remedies applied. He followed Dr. Alsberg instead of preceding him, as indicated on the program, and supplementing what the former had said indicated that the subject of rancidity was big and important enough to warrant some fundamental research. Light, heat moisture and certain metals, such as zinc, are factors in producing rancidity which may be prevented indefinitely by the exclusion of oxygen. He went into his subject in elaborate and technical detail. His address was followed by an animated discussion. In reply to the question put to him Mr. Kerr stated that his bureau took no cognizance of rancidity unless it was in the first place evident to taste and smell.

In the closing hours of the convention Dr. J. H. Shrader presented a memorial advocating fundamental research by the Government and calling for the appointment of a committee to follow the matter up whenever it seemed best.

Honorary membership in the society was tendered Dr. C. L. Alsberg and Dr. W. W. Stockberger.

Dr. David Wesson presented a code of professional ethics which was adopted with the exception of an article referring to advertising.

Finally came the election of officers already noted, the adoption of a resolution of thanks to the outgoing officers and others, followed by adjournment.

In the evening there was an informa-

subscription banquet at the City Club with an address from Dr. W. Lee Lewis of Northwestern University.

The United Peanut Association of America, P. D. Bain, president, held a convention at the same time in another part of the Congress Hotel.

### Opportunity for the Fish Industry

In a recent editorial "Printer's Ink" sees an opportunity for the fish industry to emulate other industries in national advertising campaigns to stimulate the use of their products. The editorial said:

"During the war there was a substantial increase in the consumption of fish. For this, Government propaganda was no doubt largely responsible, as the Food Administration made great efforts to teach the people to eat more fish and less of the meat products needed for the men fighting across the sea. The Government's plea was naturally based upon patriotic grounds, since the case was an emergency one, and little effort was made to 'sell' the public on the value of fish as a standard article of diet.

"It is not surprising, therefore, that there has been a decline in the consumption of fish since the war ended, and that many of the fish companies have had to lay up their boats.

"There is a remedy at hand for the weakened fishing industry, however, and it would seem that the time has come to apply it. That remedy is advertising. A properly directed educational campaign would create a new interest in fish as a food and direct public attention to the esteem in which it is held by dieticians.

"And something more could be done. It seems reasonable to surmise that one reason for the low consumption of fish in the United States is public ignorance as to its proper preparation. The cooking and serving of fish in the ordinary restaurant is atrociously done, and it is probably not much better in the average home. The American people are not born artists in cuisine, anyhow—as the French are, for example. The frying pan—that relic of pioneer days—is still the favorite weapon of our kitchens, and whatever the basic merits of the frying pan, it is often rough on flavors and inner essences.

"The fishing industry therefore might profitably study the advertising of the coffee industry and of the California fruit growers and observe how patiently they are teaching the public the proper uses of their products. They are fertile in suggestions and prolific in recipes. They have learned that it is of small avail to induce people to buy your goods unless they know how to use them right. It is the repeat order that builds volume and creates stability.

"Under present conditions fish is in large demand for consumption on Fridays only. The American people have acquired the habit of eating fish on Friday and on no other day of the week. If they can be taught to buy it on other days, the consumption of fish can be increased several fold. Such a consummation, it would seem, is devoutly to be worked for."

### Will Inspect Michigan Canneries Daily

As a result of the meeting of the Michigan Cannery Association, at Lansing, Mich., when a conference of State officials was held, Michigan cannerymen are assured of a daily inspection service for the coming year. The fruit section of the Michigan Association recently adopted specifications for grading, and this, with the daily inspection of canneries and the close check to be kept by the laboratories of the College and the State Food Department will, the cannerymen say, guarantee Michigan canned foods to be scientifically packed.



# Swift and Company Share Management

## Employees to Have Voice in Business Through Miniature Joint Government

An employee representation plan, which it is hoped will bring about closer community of interest between employee and employer, has been put into effect and is now operating in seventeen plants of Swift & Company, following its successful trial for some time in three of them.

A miniature joint government is provided whereby problems which effect the employees in the plant may be taken up and disposed of satisfactorily to both sides.

The announcement setting forth the purposes of the plan says:

"The plan provides for an assembly composed of equal numbers of elected representatives of the employees and appointed representatives of the management, acting in detail through committees of the assembly. The assembly will discuss and make recommendations on all questions referred to it, or raised by it, relating to the joint interests of the Company, and its employees, and to working conditions in particular, such as wages, hours, safety, sanitation, and like matters.

"When any decision of the assembly or joint representatives is reached by a two-thirds vote it will be sent to the management for action and will have binding effect upon both employer and employees, unless within fourteen days the board of directors of the company or the employees' representatives request the assembly to reopen the matter for further consideration with a view to reaching an agreement.

"When after such reconsideration in the assembly it is deemed impossible to arrive at a collective agreement by joint conference on any one issue, the management and the employees are at liberty to take such action outside of the plan as they may think desirable. But such action will not of itself terminate the general use of the plan which shall continue in full force so long as it is desired by employer and employee.

"No favor or prejudice may be shown either by the company or by the employees toward any employee in the matter of voting or in any other matter by reason of the employee's race, religious creed, political belief, membership or non-membership in any labor union or other organization."

The principles which have been adopted, according to John Calder, manager of industrial relations of the company, are as follows:

Compulsory submission of all differences, individual or group, in the first instance to the foreman concerned.

Compulsory submission of any grievance or disagreement to the employee and employer representative for the voting division of the plant in which the party or parties are employed.

Unanimity in every committee is essential to a binding decision.

Compulsory submission to the assembly of all joint issues not settled in committees.

Right of any minority of the assembly to have one reconsideration of a decision but no further delay except by general consent

No provision for arbitration in the plan but no specific exclusion of it as a possible means of settlement outside of the plan.

No direct veto of an assembly decision by management or employees without

recourse to joint conference for reconsideration.

Clear and specific indication in the plan of the consequences of ultimate failure to agree under the plan and of the right of parties to seek relief in such circumstances by independent action.

No provision for terminating the plan because of failure to arrive at a collective agreement on any one issue before the assembly.

## Surplus of Sugar Will Total 2,000,000 Tons

The amount of sugar being imported into the United States is much larger than at this period a year ago, according to a review of the market, published by the Federal Sugar Refining Company. This explains the low prices during the last few months. It is added that our exports of refined sugar this year have totaled a little more than one-fourth of the amount for the same period of 1920, and as a result our available supply for this year, the company says, will exceed all previous estimates, present calculations indicating a surplus at the end of the year nearer 2,000,000 tons than the estimate of 1,386,000 tons.

Only 67,536 tons of refined sugar were exported from this country in the first four months of this year, compared with 247,939 tons in the same period last year. During April, according to the Department of Commerce, only 13,022 tons were exported.

Cuba is shipping only a fraction of the amount it did last year to countries other than the United States. Up to May 21 this year other countries received only 184,013 tons of sugar from Cuba, compared with 677,256 tons up to the same date last year. These two decreases mean that 673,646 tons less Cuban and United States sugar was sent to the rest of the world.

"The Cuban financial situation is still very uncertain," declares the Federal Sugar Refining Company, "three private local banks having been forced, by runs on them, to suspend payments in one week. Of the forty-five Cuban Centrals, that have closed down, we have final figures on forty-one, showing an outturn of 3,524,860 bags compared with an original estimate for these mills of 3,638,000 bags. The loss amounts to 113,140 bags, or approximately 3.1 per cent and if this can be taken as an indication of what the remaining Centrals will do, the crop will outturn over 3,925,000 tons."

## Census Report on Candy and Ice Cream

A preliminary statement of the general results of the 1920 census of manufactures furnishing statistics concerning the manufacture of confectionery and ice cream during 1919 has been issued by the Bureau of the Census, Department of Commerce.

In 1919, 3,148 establishments engaged in the manufacture of confectionery reported products valued at \$447,800,000, while in 1914 the value of the products reported by 2,391 establishments was \$170,845,000. From 3,476 establishments engaged in the manufacture of ice

cream in 1919, the value of products reported was \$189,414,000 while in 1914 reports were received from 2,437 establishments with products valued at \$55,983,000.

The statistics for 1919 and 1914 are summarized in the following statement showing the number of establishments and the value of the products for the United States and the ten leading states for each branch of the industry, arranged by the value of the products for 1919. The figures for 1919 are subject to such change and correction as may be necessary from a further examination of the original reports.

### Comparative Summary of Statistics for the Confectionery and Ice Cream Industry, 1919 and 1914

CONFECTIONERY		
State	No. of establishments	Value of products
United States:		
1919 .....	3,148	\$447,800,000
1914 .....	2,391	170,845,000
New York:		
1919 .....	414	84,685,000
1914 .....	349	34,070,000
Massachusetts:		
1919 .....	130	60,557,000
1914 .....	148	20,131,000
Illinois:		
1919 .....	236	58,190,000
1914 .....	147	22,139,000
Pennsylvania:		
1919 .....	363	41,399,000
1914 .....	281	16,668,000
Ohio:		
1919 .....	185	25,146,000
1914 .....	132	10,134,000
Wisconsin:		
1919 .....	80	19,910,000
1914 .....	55	6,229,000
Missouri:		
1919 .....	126	17,580,000
1914 .....	100	7,255,000
California:		
1919 .....	206	16,492,000
1914 .....	124	5,863,000
Maryland:		
1919 .....	86	13,840,000
1914 .....	65	3,763,000
New Jersey:		
1919 .....	98	9,499,000
1914 .....	75	4,889,000
All other:		
1919 .....	1,224	100,502,000
1914 .....	915	39,704,000

ICE CREAM		
State	No. of establishments	Value of products
United States:		
1919 .....	3,476	\$189,414,000
1914 .....	2,437	55,983,000
Pennsylvania:		
1919 .....	476	29,721,000
1914 .....	376	8,171,000
New York:		
1919 .....	516	25,384,000
1914 .....	193	7,828,000
Illinois:		
1919 .....	226	14,912,000
1914 .....	185	4,922,000
Ohio:		
1919 .....	195	14,039,000
1914 .....	160	4,208,000
Massachusetts:		
1919 .....	148	8,340,000
1914 .....	128	2,804,000
New Jersey:		
1919 .....	147	7,400,000
1914 .....	72	2,190,000
California:		
1919 .....	92	6,734,000
1914 .....	59	1,782,000
Missouri:		
1919 .....	94	5,917,000
1914 .....	54	1,996,000
Indiana:		
1919 .....	151	5,632,000
1914 .....	115	1,782,000
Michigan:		
1919 .....	92	5,302,000
1914 .....	60	1,803,000
All other:		
1919 .....	1,339	66,033,000
1914 .....	1,035	18,497,000



# A Review of the Honey Situation

## Producers Claim That They Will Be Injured Unless Tariff Protection Is Granted

E. H. Tucker, economic statistician of the First National Bank of Los Angeles and the Los Angeles Trust and Savings Bank, has prepared the following statement regarding the status of the honey industry in California and other states.

"It is only recently that the honey industry has become a specialized, important industry in the United States. This development has taken place almost entirely in the State of California and is to a great extent the result of the activity of co-operative marketing associations.

"Heretofore, statistics as to honey production and consumption in the United States have been almost negligible, because of the fact that the production of honey was maintained as a side-line by the average agriculturist. The development of the honey industry upon a scientific commercial basis has created the necessity for accurate information as to honey production, and for a careful scientific analysis of the honey situation. As a consequence, the research department of the First National Bank of Los Angeles and the Los Angeles Trust and Savings Bank has undertaken a careful study of the honey situation in the United States and the State of California. While it has been impossible to secure as detailed information as might be desired, because accurate statistics have not been maintained in the past, it has nevertheless proved possible to secure a considerable amount of accurate data with regard to the industry.

"California produces approximately 15 per cent of the honey produced in the United States of America. Iowa is the second state, producing 6 per cent of the entire crop of the United States. New York, Illinois, Michigan and Wisconsin each produce approximately 4 per cent, and Pennsylvania, Georgia, Florida, Ohio, Indiana, Missouri and Colorado 3 per cent. No other state produces more than 2 per cent of the entire honey supply of the United States.

"California alone markets the major proportion of its honey production outside of the state in which it is produced. As a general rule from 70 per cent to 90 per cent of the commercial honey produced in California is marketed outside of the state and from one-third to one-half of the honey marketed outside of the state in which produced is California honey.

### California Production

"Careful estimates as to commercial honey production in California during the past twenty years are given below

Year	Pounds
1900	2,208,000
1901	8,112,000
1902	5,125,000
1903	8,400,000
1904	1,040,000
1905	10,000,000
1906	4,510,000
1907	7,120,000
1908	4,524,000
1909	11,532,000
1910	4,080,000
1911	9,500,000
1912	4,710,000
1913	3,720,000
1914	7,950,000
1915	9,360,000
1916	8,100,000
1917	6,500,000
1918	5,500,000
1919	6,350,000
1920 (not final)	9,500,000

"It is impossible to secure accurate figures as to total honey produced in the United States of America. However, the Chief of the Field Service of the De-

partment of Agriculture, estimates that 180,000,000 pounds will approximate the total honey production in the United States during 1916, and states that it is his belief that these figures are within 10 per cent of the actual production. Upon this basis it is estimated that the total production for the United States was about 150,000,000 pounds in 1917, 180,000,000 pounds in 1918, 210,000,000 pounds in 1919 and 250,000,000 pounds in 1920. It may be, however, that the 1920 production of honey in the United States totaled as much as 300,000,000 pounds. This is the estimate made by Dr. E. F. Phillip, epiculturist of the Bureau of Entomology.

"Commercial honey is produced almost exclusively in the form of extracted, or bulk honey, although there are three forms in which honey enters the commercial market. Next in importance to extracted honey is comb honey and there is a small amount of chunk honey sold upon the market. By chunk honey is meant that honey which is sold in the form in which it is taken from the hive, wax and honey being intermingled.

"Practically all of the honey now produced in California is extracted honey. In 1916, 81 per cent of the California commercial production was sold in such form. In 1917, 82 per cent, in 1918, 90 per cent, in 1919, 97 per cent, and in 1920, 96 per cent. In the United States approximately 55 per cent to 60 per cent of all honey produced is sold as extracted honey. Comb honey is relatively unimportant in California, production of such honey in 1920 amounting to only 2 per cent of the total amount of honey produced in the state. This is the result of the gradual change to extracted honey, as in 1916 approximately 18 per cent of California honey was sold as comb honey.

### Comb Honey Produced in East

"The production of comb honey is exceptionally difficult and its lasting qualities are such that it is hard to market comb honey outside of the state in which it is produced. As a consequence, the bulk of the comb honey sold in the United States is that produced and sold locally in various Eastern states. In 1916 and 1917, 38 per cent of all the honey produced in the United States was produced in the form of comb honey. In 1918 the percentage was 31 per cent, and in 1919 and 1920, 30.5 per cent.

"Approximately 10 per cent of the honey produced in the United States is sold as chunk honey. In California only from one to two per cent of all honey produced is sold in this form.

"The principal markets for honey moving through the regular channels of trade are reported as Medina, Ohio; Cincinnati, New York City, Chicago, Kansas City, Philadelphia and Boston. It is estimated, however, that approximately 90 per cent of the honey produced in the country, with the exception of the California production, does not get twenty miles from the home of the honey producer.

"In the past the markets for commercially produced honey may have been, to a great extent, foreign markets. In 1919 there were 9,105,362 pounds of honey exported from the United States. The principal importing countries were the United Kingdom, which imported 2,882,951 pounds; France, which imported 1,129,704 pounds; Sweden, which imported 1,128,152 pounds; Belgium, which imported 922,008 pounds; The Netherlands, which imported 690,595 pounds; Denmark, which imported 417,492 pounds; and Canada, which imported 297,414

pounds. While these exportations to foreign countries during 1919 were slightly larger than normal exportations, because of the sugar shortage, they may nevertheless be taken as indicative of the proportion of American produced honey formerly absorbed by foreign markets.

### Foreign Markets Being Closed

"At present, these markets are being definitely closed to United States honey producers. In 1920, there were only 1,539,725 pounds of honey exported from the United States of America, almost 50 per cent less than total exportations to Great Britain during 1919 and approximately 83 per cent less than total exportations during 1919.

"Several factors are closing these foreign markets to American honey producers. The first of these is the depreciation in foreign exchanges, which is making it exceptionally difficult for foreign countries to purchase American produced goods. This situation may be only temporary and the organization of the new \$100,000,000 Foreign Trade Financing Corporation may materially assist in stabilizing exchanges.

"The other factor which is closing foreign markets to American productions is probably permanent. Throughout the world, companies are being formed to further honey production. Cheap labor costs, and inferior methods in handling honey will probably assure these corporations a comparative monopoly on foreign honey markets.

"The situation is made doubly serious by the fact that many of these companies are formed with the express purpose of exploiting United States markets. They are shipping quantities of extracted honey into the New York market. This honey, it is alleged, is sometimes shipped into the United States in containers, consisting of previously used casks, barrels, and even five gallon oil cans. This imported honey is not always produced under sanitary conditions and may even contain bacilli larvae, which are germs of a very contagious disease, similar in seriousness to the boll weevil in the cotton industry. Consequently, efforts are being made to secure an emergency protective tariff of not less than 5 cents per pound upon every pound of honey imported into the United States from foreign markets. The purpose of this tariff is not only to protect United States honey from competition with foreign honey, but is also to protect the honey industry from possible inroads which these larvae might make upon the bee of the United States, if importation is permitted to continue. A movement to require rigid inspection of imported honey and rejection of any honey containing injurious larvae could do much to correct this evil, but present attempts by producers seems to be directed toward efforts to secure tariff protection.

### Must Rely on Domestic Consumption

"The United States honey industry is today definitely faced with the fact that it must rely almost entirely upon domestic markets in the future. In the past it has been the custom to market domestically produced honey in five gallon cans, containing sixty pounds of extracted honey. As a general rule two of these cans form a case. A considerable proportion of this honey was retailed direct from the can into containers belonging to the consumers.

"The baking trade in the United States has used large proportions of the United States produced honey in preference to sugar, because it permits the holding of a certain proportion of moisture in baked goods. As commercial baked goods tend to dry and chip easily if sugar is used, honey is considered superior for sweetening purposes.

"In order to better exploit local markets a new means of marketing honey is fast gaining in favor in the United States and is being pushed by co-opera-



tive honey associations in California. Honey is being put up for the retail trade in one pound, two and a half pound, five pound and ten pound friction-top cans; and in eight ounce and sixteen ounce glasses. These containers carry a label showing the name of the canning company and the source of the honey, so that its cleanliness can be vouched for. Active steps are being taken to develop larger home markets for this new form of honey. The food value of honey is unquestioned as it contains 1,485 heat calories per pound.

"High railroad freight rates are interfering with the marketing of California produced honey, and active steps are being taken to secure a reduction in these rates so that California honey can enter the Eastern markets of the United States. With the development of water transportation, through the Panama Canal, it is anticipated that increasing amounts of California honey can enter Eastern markets at cheaper transportation costs. It is being found that co-operative marketing of honey, as at present carried on in California, is reducing the cost of marketing honey by several cents per pound, thereby assisting in profitable marketing. The California Honey Producers Co-operative Exchange, with head offices in Los Angeles, markets the honey of approximately 85 per cent of the California commercial producers.

#### Problems Are Three-Fold

"The problems which the honey industry of the United States, and particularly of California, are faced today are, therefore, three-fold. The first is the securing of an effective means of excluding any infected foreign honey, the second is a reduction in freight rates to Eastern markets, the third is the preparation of honey in more marketable forms and the development of larger consumption in the United States. The first of these problems will require Congressional action. The solution of the second will be made easier through the development of water transportation through the Panama Canal and the ready response which is being made in retail markets to the new forms of marketing honey will go a long way in solving the third problem.

"Honey prices have dropped materially in the past year, because of general readjustment and because of the closing of foreign markets. While in 1918 and 1919 and the earlier part of 1920 the prices for the better grades of California honey in Los Angeles markets ranged between 18 cents and 23 cents, these prices have now dropped to as low as 12 cents and 13 cents. Predictions as to future honey prices can not be made with any accuracy today but indications are that with the development of new domestic markets the excess honey formerly shipped to foreign countries will tend to be absorbed in the United States."

#### Candy Manufacturers May Spend \$500,000 in Advertising

The National Confectioners' Association at its recent convention at Atlantic City, N. J., discussed the advisability of spending \$500,000 in national advertising to boom the candy business.

The association elected H. H. Harris, Lynchburg, Va., president. Walter C. Hughes was re-elected secretary-treasurer. Vice presidents elected were: Walter P. Sharp, of Philadelphia; R. R. Bean, of Grand Rapids, Mich.; T. R. Blakeslee, of New Haven, Conn.; Herman L. Heide, of New York City; John P. King, of Fort Worth, Tex.; E. B. Hutchins, of Fond du Lac, Wis.; William P. Reed, of Chicago; Horace S. Ridley, of Boston; Leon Sweet, of Salt Lake City; O. B. Elmer, of New Orleans; E. K. Rice, of Sioux City, Iowa; W. E. Brock, of Chattanooga, Tenn.; J. A. Cox, of Indianapolis, and Fred Wundlerle, of Philadelphia.

## Census Figures on the Manufacture of Food Products

### Comparative Statistics for 1919 and 1914 Are Given Showing Gains in Nearly All Divisions

The Bureau of Census, Department of Commerce, has issued a statement giving preliminary figures obtained in the 1920 census relative to manufactured

products. Comparative figures for the previous census year, 1914, are also given. The following are the figures on food products:

	Number of establishments		Value of products	
	1919	1914	1919	1914
Baking powders and yeast.....	84	124	40,270,000	22,339,000
Bread and other bakery products.....	25,232	25,963	1,406,145,000	491,893,000
Butter .....	3,737	4,356	583,216,000	243,379,000
Butter, reworking .....	5	17	2,229,000	5,869,000
Canning and preserving fish.....	410	330	77,284,000	31,111,000
Canning and preserving, fruits and vegetables .....	3,069	3,153	492,625,000	149,176,000
Canning and preserving oysters.....	65	65	2,976,000	2,238,000
Cheese .....	3,530	3,082	143,708,000	51,745,000
Chocolate and cocoa products, not including confectionery .....	48	36	139,258,000	35,713,000
Coffee and spice, roasting and grinding .....	794	696	304,740,000	150,747,000
Condensed milk .....	401	190	339,570,000	69,161,000
Confectionery and ice cream .....	6,624	4,754	637,215,000	209,669,000
Cordials and flavoring sirups.....	148	142	46,805,000	15,316,000
Flavoring extracts .....	454	424	27,671,000	11,380,000
Flour-mill and gristmill products.....	10,714	10,788	2,193,007,000	877,680,000
Food preparations, not elsewhere specified .....	1,998	1,559	662,883,000	219,333,000
Glucose and starch .....	56	89	186,256,000	52,615,000
Lard, not made in slaughtering and meat packing establishments.....	6	6	220,000	147,000
Oleomargarine .....	39	17	65,903,000	15,080,000
Peanuts, grading, roasting, cleaning and shelling .....	79	61	33,399,000	14,996,000
Pickles, preserves and sauces .....	712	672	144,302,000	60,915,000
Rice, cleaning and polishing .....	86	59	90,038,000	23,039,000
Salt .....	86	98	37,514,000	14,070,000
Slaughtering and meat-packing, wholesale .....	688	649	3,714,340,000	1,454,495,000
Slaughtering, wholesale, not including meat-packing .....	605	630	281,417,000	197,470,000
Sugar, beet .....	85	60	149,156,000	62,605,000
Sugar, cane .....	202	181	57,741,000	21,635,000
Sugar, refining, not including beet sugar .....	20	18	730,987,000	289,399,000
Vinegar and cider .....	720	618	24,671,000	7,811,000

#### Large Vinegar and Pickle Output in Canada

Figures issued by the Dominion Bureau of Statistics covering operations in 1919, show a large business in vinegar and pickles, capital to the amount of \$3,487,223 being invested, three-quarters of it in Ontario. There were 34 plants covered by the report, and 16 of these were situated in that province. There were 400 male and 250 female employees and the aggregate wage bill was \$659,663. The total value of the products was given as \$4,267,568, of which \$3,145,669 was from Ontario plants.

The principal products were as follows, with value based on the selling price at the point of production (exclusive of vinegar, pickles, cider, catsup, etc., made in certain related industries, such as fruit and vegetable canning, evaporating and preserving etc.): Vinegar and cider, 3,509,270 gallons, \$1,185,537; pickles, 689,725 gallons, \$1,170,959; tomato catsup, 294,100 gallons, \$550,029; other sauces and relishes, 1,600 gallons, \$3,450; jams, 1,057,254 pounds, \$134,232; canned vegetables, \$355,755; prepared mustard, \$96,958.

#### Recent Patents

The following patents of interest to readers of THE AMERICAN FOOD JOURNAL recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Continental Trust Building, Washington, D. C., at the rate of 20 cents each. State number of patent and name of inventor when ordering.

1,374,899. Process of removing cocoonut-shells. Franklin Baker, Jr. Philadelphia, Pa.

1,375,057. Butter-fat gage. John A. Meeker, Potsdam, N. Y.

1,375,380. Chocolate-cooling machine. Henry C. Gates, Cedar Rapids, Iowa.

1,376,334. Food product. Marie A. Heginger, New York, N. Y.

1,377,125. Whole-rice food and process of producing the same. Arant M. Gurnar, St. Paul, Minn.

1,377,136. Pneumatic mechanism for conveying and stacking food products. Edward E. Lawrence, Jamaica, and Kenneth D. Loose, New York, N. Y., assignors to Loose Wiles Biscuit Co., New York, N. Y.

1,377,172. Process of dehydrating potatoes. Arthur E. Allen, Kirkland, Wash.

1,377,536. Coffee-roasting machine. Frederick A. Wilcox and Edward L. McGrory, Chicago, Ill.

1,377,681. Preparation of fruits for foods and beverages. Oscar Hayda, Boston, Mass.

1,377,775. Lump-sugar-packing machine. Giuseppe Jacobitti. Crockett, Cal.

1,377,825. Manufacture of bread. Charles, Edward and Roy S. Fox, York, Pa., assignors to Roy S. Fox.

#### Candy Sales Billion Dollars a Year

Census Bureau officials estimate the sale of candy to be about \$1,000,000,000 a year since the advent of prohibition.

The total value of the ice cream and candy manufactured in 1919 reached \$637,214,000, the report discloses. When prohibition came into force, this figure was greatly increased. A total of \$447,800,000 was spent for candy in 1919 and \$189,414,000 for ice cream.



# Large Expansion in Condensed Milk Trade

## United States Makes Enormous Gains Since 1913 in Exports to European Countries

An enormous increase in international trade in condensed and evaporated milk since the prewar period is shown in a study of world conditions recently made by the United States Bureau of Markets. This increase is in striking contrast to the decreased world trade in butter and cheese. The total volume of international trade in 1919 was at least six times as great as in 1913. In 1920 the world trade, although diminishing, was still far in excess of what it was in 1913.

The outstanding feature in the world situation during the war period was the growth of the condensed milk industry in the United States, both as to manufacture and trade, and with this, if not wholly explanatory of it, the unprecedented consumption and lower production of Europe. Since 1919, because of a more restricted demand, a radical readjustment has been forced upon the entire condensed milk industry and trade of the world. European supply and demand are recovering their balance and more normal sources of demand in the Far East and the tropical regions are developing.

### Radical Changes During War Period

The European countries taken as a unit were in 1913 more than self-sustaining, with an importation for consumption of 97,000,000 pounds and an exportation surplus of 136,000,000 pounds. In 1919 the exporting countries of Europe furnished but 47,000,000 pounds for export, less than 10 per cent of Europe's total imports for consumption for that year. The United Kingdom in 1919 imported 421,00,000 pounds from the United States alone, or three times as much as the total imports of that country in 1913. In Switzerland production fell off, consumption increased, and exports decreased markedly. In 1913 that country had an exportable surplus exactly equal to the imports for consumption by the United Kingdom.

The demand from the Orient and the Tropics contributed comparatively little to the expansion of the world's trade between 1913 and 1919, notwithstanding the peculiar suitability of this dairy product in withstanding heat and supplementing the native food supplies. Compared with the total volume of trade the quantity taken in 1919 by these regions was apparently unimportant. That this trade was more nearly normal and of more permanent significance than that of some of the countries that loomed largest in the war-time trade is indicated by a comparison of the exports to those countries shown in Table 2.

In the Southern Hemisphere Australia was the only country in 1913 that was exporting any surplus, and the excess of exports of that country was negligible, an item of only a few hundred thousand pounds. In 1919, with an exportable surplus amounting to 27,000,000 pounds, it was still the only exporting country of consequence in this group. New Zealand had an exportable surplus of about 1,000,000 pounds. In Argentina there are no condenseries of importance as yet. While increasing its exportation of butter and becoming an exporter instead of an importer of cheese, Argentina remained an importer of condensed milk, taking somewhat more for consumption in 1919 than in 1913. The imports for consumption by this group of countries have decreased, although not to any significant degree.

Canada in 1919 was exporting six times as much as in 1913. Less than 9,000,000 pounds were exported in 1913. Canada was thus just keeping pace with the increase in the world's trade.

ports of condensed milk by the United States have never been important, amounting generally to less than 2 per cent of the domestic production. The tendency during 1913 and 1914, however, suggests the probability that if the war had not affected foreign production and trade, foreign competition in the home

Table 1—International Trade in Condensed and Evaporated Milk for 1913\* and 1919  
(In thousands of pounds, i. e., 000 omitted.)

Countries—	1913— Excess of imports over exports	1913— Excess of exports over imports	1919— Excess of imports over exports	1919— Excess of exports over imports
United Kingdom .....	22,904	.....	8,661	.....
Cuba .....	14,681	.....	*12,935	.....
British South Africa .....	11,151	.....	12,042	.....
British India .....	9,219	.....	6,077	.....
Philippine Islands .....	8,829	.....	2,781	.....
Japan .....	7,336	.....	867	.....
Brazil .....	5,775	.....	2,947	.....
Spain .....	5,668	.....	7,250	.....
China .....	1,628	.....	147	.....
Java and Madura .....	964	.....	1,664	.....
Egypt .....	79	.....	.....	1,443†
Argentina .....	26	.....	**	.....
New Zealand .....	.....	89,146	.....	10,517
Sweden .....	.....	33,713	**	737
Switzerland .....	.....	14,696	.....	836,356
Norway .....	.....	†8,886	.....	†54,172
United States .....	.....	6,327	**	.....
Canada .....	.....	4,757	27,011	.....
Denmark .....	.....	2,095	101,375	.....
Italy .....	.....	366	.....	27,246
France .....	.....	28	** †	.....
Australia .....	.....	6	.....	35,443
Belgium .....	89,574	.....	354,642	.....
Netherlands .....	33,429	.....	35,920	.....
Total .....	211,263	160,020	574,319	965,914

\*Incomplete. Trade by land for 11 months ending Nov. 30, 1919.

\*\*Though the official records of Belgium, Denmark, Norway and Sweden show no imports, exports from the U. S.

### Exports Increase Tremendously

It was in the trade of the United States that a spectacular change was made in this period. From an exportable surplus of 15,000,000 pounds in 1913 this country's excess of exports expanded to the enormous quantity of 836,000,000 pounds. This increase of more than 800,000,000 pounds is the equivalent of at least 2,000,000,000 pounds of whole milk. During the single month of June, 1919, the United States exported 114,835,626 pounds, a quantity several times greater than the total exports for any entire year prior to the war. The im-

market as elsewhere would have been a factor with which manufacturers in the United States would have had to reckon. There was already a tendency toward overproduction in this country.

The most notable shifts in the sources of supply and demand on the part of single nations took place in France, Belgium, Italy, and the Scandinavian countries. Prior to the war these countries had been somewhat more than self-sustaining. By 1919 France and Belgium were exceeded only by the United Kingdom in the quantities imported for consumption. The imports of Italy were

Table 2—Exports of Condensed, Evaporated and Powdered Milk from the United States

Destination	Year ending June 30, 1913 Pounds	Calendar years— 1919 Pounds	1920 Pounds
Belgium .....	.....	61,596,636	17,943,937
Denmark .....	.....	3,656,617	80,360
France .....	.....	114,818,165	58,936,867
Germany .....	425	13,068,494	28,784,004
Greece .....	.....	1,617,653	1,152,352
Italy .....	.....	10,475,590	4,269,261
Netherlands .....	.....	11,821,267	5,689,655
Norway .....	.....	8,625,216	1,126,561
Poland and Danzig .....	.....	.....	17,604,055
Spain .....	1,415	1,435,951	579,936
Sweden .....	.....	10,233,562	312,442
Switzerland .....	.....	18,746,372	2,447,879
Turkey in Europe .....	.....	3,829,344	1,529,459
United Kingdom .....	1,475	420,928,450	124,658,560
Canada .....	174,974	4,578,983	2,384,766
Panama .....	1,364,023	3,599,564	4,511,626
Mexico .....	925,332	2,946,455	8,012,693
Cuba .....	6,466,870	33,461,993	50,517,629
Brazil .....	140,713	2,894,562	3,141,886
China .....	1,049,524	5,555,679	3,664,378
British India .....	57,047	10,130,675	12,744,299
Straits Settlements .....	27,514	6,444,295	8,681,544
Dutch East Indies .....	4,312	4,858,942	2,030,937
Hongkong .....	146,850	2,269,288	3,308,543
Japan .....	150,961	4,123,127	5,112,163
Philippine Islands .....	1,350,970	14,085,937	12,874,621
British South Africa .....	487,524	1,025,731	2,743,201
Egypt .....	.....	6,710,733	1,465,877
Other countries .....	4,175,989	69,326,133	27,940,530
Total .....	16,525,918	852,865,414	414,250,021
Total powdered .....	.....	.....	3,172,039



exceeded by the United Kingdom, France, Belgium and Cuba. Norway, second only to Switzerland as an exporter in 1913, was taking substantial quantities from the United States in 1919. Denmark, while actually changing from an exporter to an importer, has been, so far as condensed milk is concerned, unimportant as either. Sweden did not completely change, but, although practically no condensed milk was imported in 1913, that country also became one of the wartime customers of the United States.

A considerable quantity of condensed milk produced in the United States was disposed of in the Near East by the U. S. Grain Corporation through the various relief organizations during both 1919 and 1920.

Some significant tendencies in international trade are indicated by a comparison of Tables 1 and 2 accompanying this article. Apparent discrepancies in these tables may be accounted for by the lack of any official records of imports of condensed milk by certain countries to which the United States is known to have exported heavily; by the fact that transshipment figures are included in the United States exports in Table 2, whereas every effort was made to eliminate all but imports for consumption from Table 1; and by the fact that Table 2 includes powdered milk.

The exports of the United States for 1920 are shown by countries in Table 2, together with the exports to the same countries during 1919 and 1913. With the exception of Germany and Poland, the European countries imported from the United States in 1920 considerably less than in 1919. On the other hand, countries in Asia, South America, Africa and Oceania increased, with few exceptions, their imports from the United States during 1920.

China is one of the exceptions, having imported less in 1920. At the same time fully three-fourths of the condensed milk imported by China was furnished by the United States. Consumption there is as yet largely limited to the foreign population. Neither did the Dutch East Indies and the Philippine Islands import quite so heavily from the United States in 1920, but they took far more than in 1913. The surplus of Australia now goes largely to "the Islands." Condensed and preserved milk constitute the most important items of India's imports of dairy products.

#### United Kingdom Important Market

The United Kingdom is a market of permanent importance to the condensed milk industry of the United States. Of the total exports of the United States in 1919, amounting to 853,000,000 pounds the United Kingdom took 421,000,000 pounds, or practically one-half. Although the proportion taken by that country had fallen in 1920 to one-third of the total exports of the United States, its imports of 219,000,000 pounds were still equal to 160 per cent of its total 1913 imports.

Prior to the World War Switzerland, an important competitor of the United States, exported more condensed milk than any other country. During the entire year 1920 that country exported approximately 46,000,000 pounds of condensed milk, which was more than double the total 1919 exports, but still only about one-half of the 1913 exports. Consular reports indicate that it is generally expected by the Swiss trade that the increased consumption in that country resulting from the war will continue. The manufacture of milk chocolate, a competing industry in Switzerland, has already made great progress toward regaining its prewar status.

Some American condensed milk was imported late in the war period by Swiss chocolate manufacturers.

The Netherlands has supplied considerable fresh and condensed milk to Germany. Production of condensed milk in the Netherlands in the last three years has increased 75 per cent, roughly speaking, reaching in 1920 about 80,000,000 pounds. The exports of that country have in a general way kept pace with increased production, the proportion in 1919 being somewhat more than one-half. In 1915 the exportable surplus was 3,000,000 pounds and in 1913 but a few thousand pounds.

The condensed milk industry of Canada underwent an expansion, due to the World War, somewhat similar to that of the United States, and is now experiencing a check. Aside from lower prices, however, the check appears to have affected expansion only, and the depression is not so far-reaching as in the United States. The production of 78,000,000 pounds in 1919 was no more than in the previous year, and the exports of 52,000,000 pounds for 1920 were practically the same as for 1919. But the fact that these exports represented in 1919 about 65 per cent of the production shows that the Canadian industry was largely dependent upon export trade. The bulk of the imports into the United States are from Canada.

#### Exports Fell Off in 1920

For the year 1920 the total exports of condensed and evaporated milk by the United States, while maintaining the position of this country as first among exporting countries, were less than half of the 1919 exports. During the same period the production decreased only one-fourth. In 1920, according to preliminary reports, the production was 1,559,000,000 pounds, compared with 2,100,000,000 pounds in 1919. In fact, the accompanying graph, showing the trend of production, exportation, and stocks on hand from month to month during 1919 and 1920, indicates that the wartime production did not lose momentum, when allowance is made for seasonal trend, until the last quarter of the year 1920 regardless of the radical decrease in foreign trade occurring as early as the first of the year. During the first eight months of 1920 the United States continued to manufacture condensed and evaporated milk in large quantities. During 1920 not more than 26 per cent of the total production was exported, compared with 41 per cent in 1919. In fact the proportion was lower in 1920 than in 1916 or any year since.

Total stocks of condensed and evaporated milk in the hands of manufacturers on Jan. 1, 1921, were 229,410,000 pounds, a quantity equal to 187 per cent of the stocks on hand on Jan. 1, 1920, and 325 per cent of the stocks on Jan. 1, 1919. These stocks have been but slightly affected by imports. During 1920 the United States imported but 23,756,000 pounds of "condensed milk and cream," or 1.1 per cent of the domestic production for that year. Of this amount 17,290,000 pounds were imported from Canada and 5,793,000 pounds from the Netherlands.

The relative importance of these different products to the dairy industry of the United States is quite another matter. In both 1919 and 1920 condensed milk utilized but 12½ per cent of the total quantity of milk going into these three products. However, the manufacture of condensed milk, together with cold storage, normally acts as a stabilizer of the market for all dairy products and should not be regarded as an entirely separate and independent industry. Without question the check to the condensed-milk industry through the slump in foreign demand was disastrous to that industry, considered independently.

## Meat Exports Increase But Value Is Much Less

The decrease in wholesale meat prices here and abroad is shown in graphic fashion by the official export figures for April, according to an analysis of these statistics issued by the Institute of American Meat Packers. The Institute's statement says:

"Although total exports of meat and meat products for April, as reported by the Bureau of Foreign and Domestic Commerce were about 12 per cent larger than for the month of April last year, the value was 30 per cent less.

"Exports of lard during April, as compared with April last year increase from 40,758,401 to 53,275,457 pounds, but decreased more than 33 per cent in value. Exports of bacon likewise increased from 24,356,170 to 32,051,837 pounds, but the value, despite the increase in quantity, remained stationary. The quantity of hams and shoulders exported increased from 15,640,236 to 24,925,807 pounds, or approximately 60 per cent, but the total value increased only about 25 per cent.

"The following table shows the quantity and value of meat and meat products exported during the month of April for the last three years:

	Quantity Pounds	Value
April, 1919	403,450,454	\$120,652,947
April, 1920	117,937,560	28,510,486
April, 1921	131,686,740	20,100,142

#### Margarin Manufacturers to Meet June 30-July 1

The second annual convention of the Institute of Independent Margarin Manufacturers will be held at the Hotel Traymore, Atlantic City, N. J., June 30 and July 1. The following speakers have accepted invitations to address the convention: Dr. C. L. Alsberg, Chief Bureau of Chemistry, U. S. Department of Agriculture; Frank E. Gorrell, Secretary and Treasurer, National Canners' Association; Louis N. Geldert, assistant to the president of the Interstate Cotton Seed Crushers' Association.

A program is in course of preparation and the many problems of the margarin industry will be discussed by able speakers engaged in the various phases of the industry.

#### John Clarke Elected President of Spice Association

The American Spice Trade Association, at its recent annual meeting in New York City, elected John Clarke, New York, president; William Tappenbeck, New York, vice president, and J. Melville Morris was re-elected treasurer.

New directors to serve two years are George B. Hutton, H. P. Winter & Company; C. A. Thayer, Austin, Nichols & Company; George H. Carter, D. & L. Slade Co., Boston, ex-officio. Continuing directors for this year are R. M. Littlejohn, L. Littlejohn & Company, and George D. Joyce, A. Colburn & Company.

#### United Peanut Association Meets

About sixty persons attended the convention of the United Peanut Association, held at the Congress Hotel, Chicago. About thirty of them were sellers, cleaners and crushers of peanuts in the Southern states—Virginia, North Carolina, South Carolina, Georgia, Alabama, Florida and Texas.

One of the most important matters to be considered was the establishment of government grades for peanuts, made with a view of having the U. S. Government promulgate same. Wells A. Sherman of the Bureau of Markets, Washington, D. C., was present and assisted a committee appointed to arrive at an understanding at what should be suggested.



# PRACTICAL BOOKS ON FOOD SUBJECTS

Any of the following books may be ordered from THE AMERICAN FOOD JOURNAL:

**Principles of Nutrition**—W. H. Jordan, Director  
New York Agricultural Experiment Station.

Aims to show the adjustment of reliable facts to a rational system of nutrition without insisting upon adherence to technical details that are not feasible in the ordinary administration of the family dietary. The treatment is practical as well as scientific. **\$2.50**

**The Newer Knowledge of Nutrition**—E. V. McCollum, of the School of Hygiene and Public Health of Johns Hopkins University.

An authoritative new book that demonstrates beyond argument the great value of milk and dairy products in the human dietary, and shows how these are to be employed in promoting growth, health and vigor. **\$2.50**

**Feeding the Family**—Sm. W. Rose, Ph.D., Assistant Professor in the Department of Nutrition of the Teachers' College, Columbia University.

This is a clear and concise account in simple everyday terms of the ways in which modern knowledge of the science of nutrition may be applied in ordinary life. The food needs of the typical family groups, men, women, infants, children of various ages, are discussed in separate chapters, and many concrete illustrations in the form of food plans and dietaries are included. **\$2.40**

**A Laboratory Handbook of Dietetics**—M. S. Rose, Assistant Professor of Household Arts, Teachers' College, Columbia University.

A series of definite exercises for laboratory work in dietetics, accompanied by problems and explanations of calculations. There is also included a series of reference tables, giving food values for use in laboratory calculations which are in a more convenient form than can be found elsewhere. **\$1.60**

**Chemistry of Food and Nutrition**—H. C. Sherman, Professor of Food Chemistry of Columbia University.

Presents the principles of the chemistry of food and nutrition with special reference to the food requirements of man, and the considerations which should underlie our judgment of the nutritive values of food. **\$2.40**

**The Book of Ice-Cream**—W. W. Fisk, Assistant Professor of Dairy Industry of the New York State College of Agriculture at Cornell University.

The principles of ice-cream making and handling are discussed in this book for the benefit of the student and manufacturer of ice-cream. Discusses the materials used, machinery used, chemistry, marketing, management, etc. **\$3.25**

**Management of Dairy Plants**—M. Mortensen, Professor of Dairying at Iowa State College.

Considers the Form of Organization of the Dairy; Creamery Construction; the Composition of Butter and Overrun; Cost of Manufacturing Butter; Profits Obtained from the Manufacture of Ice Cream; Marketing of Dairy Products; Office Records; Cost of Marketing Dairy Products; Preparing the Butter for Markets; Advertising Dairy Products; Business Correspondence; Credits and Collections; Bookkeeping. **\$2.40**

**The Modern Milk Problem**—J. S. MacNutt.

Practical information as to the control of the milk supply, together with the various means and needs for sanitary supervision in the laboratory and in the field. Grading the milk supply of large and small communities is given special attention. **\$2.00**

**A Manual of Milk Products**—W. A. Stocking, Jr., Professor of Dairy Industry Cornell University.

This "manual" has been prepared for the purpose of bringing together the work of the best authors on the entire subject of milk and its products. Chapters on the Chemical Composition of Milk, The Factors Which Influence Its Composition, Physical Properties of Milk, The Various Tests Used in the Study of Milk, Butter Making, The Cream Supply, Butter Making on the Farm, Cheese Making, and The Bacteriology of Dairy Products. **\$3.00**

**Milk and Its Products**—H. H. Wing, Professor of Animal Husbandry of Cornell.

A scientific but non-technical discussion of the secretion, composition, production and testing of milk, the ferments of milk and their control, determination of bacteria in milk, market and certified milk, separation and refining

of cream, manufacture and marketing of butter and cream, etc. **\$2.50**

**The Commercial Apple Industry of North America**—J. C. Folger, Assistant Secretary of the International Apple Shippers' Association; and Thomson, S. M., formerly Fruit Crop Specialist of the United States, Department of Agriculture.

The selection and care of orchards, particularly large commercial crops; extensive treatment of handling, storing and marketing crops. Varieties of apples with their marketable qualities, time of ripening, uses, etc. By-products also discussed. **\$3.50**

**Food Products**—H. C. Sherman.

The first and second chapters deal with the principal constituents and functions of foods and with food legislation; then follow chapters on milk, cheese, and other milk products; eggs, meats and meat products; vegetables, fruits and nuts; edible fats and oils; sugars, molasses, syrups and confectionery; and food adjuncts. **\$2.75**

**Chemistry of Plant and Animal Life**—Harry Snyder, Professor of Agricultural Chemistry of the University of Minnesota.

Discusses the composition of plant and animal bodies, the chemistry of the plant and its food and its growth, the chemistry of human foods and animal nutrition, the digestibility and value of foods. **\$2.25**

**The Book of Cheese**—Thom and Fisk, Investigator of Cheese and formerly of Conn. Agricultural College; Fisk, Assistant Professor Dairy Industry New York State College of Agriculture at Cornell University.

Intended as a guide in the interpretation of the processes of making and handling a series of important varieties of cheese. The kinds here considered are those made commercially in America, or so widely met in the trade that some knowledge of them is necessary. The relation of cheese to milk and to its production and composition has been presented in so far as required for this purpose. The principles and practices underlying all cheese-making have been brought together into a chapter on curd-making. **\$2.40**

**The Food Problem**—Kellogg-Taylor, of the United States Food Administration and Commission for Relief in Belgium and Professor in Stanford University of California; of the United States Food Administration, and Exports Administration Board, and Professor of the University of Pennsylvania.

Part I of this book deals with the food situation of the Western European Countries, and the United States; part two the technology of food use. **\$2.00**

**Human Foods and Their Nutritive Value**—Harry Snyder.

Presents in concise form the composition and physical properties of foods, and discusses some of the main factors which effect their nutritive value. Prominence is given to those foods that are most extensively used in the dietary, and to some of the physical, chemical and bacteriological changes affecting digestibility and nutritive value which take place during their preparation for the table. **\$2.00**

**Dietetics for High School**—Florence Willard, B. S., Chairman of the Department of Household Science, Washington Irving High School, New York City; and Lucy Gilett, M.A., Director of the Dietetic Bureau, Boston, Mass.

The purpose of this book is to teach in a manner adapted to high school the application of the principles of nutrition to the feeding of the family with a special emphasis on relative values of different foods, economy in buying, and the importance of good food habits. **\$1.48**

**A Textbook of Domestic Science**—M. G. Campbell, Instructor in Home Economics, Jesup W. Scott High School, Toledo, Ohio.

A practical textbook and guide which is equally suitable for use in the school library or in the home kitchen. Food classification, the hygienic and dietary value of various food, the chemistry of foods and of food preparation, are treated adequately and with careful correlation. **\$1.40**

**A Laboratory Manual of Foods and Cookery**—E. B. Matteson, Instructor in Home Economics in George Peabody College for Teachers, and Ethel M. Newlands, Director of Home Economics in Buffalo Technical High School.

A textbook that approaches the study of cookery through experimental work upon the chemical, physical, bacteriological and biological properties of foods. A soundly scientific and thoroughly practical book and one that will serve either as a text for an independent course in cookery or as a laboratory manual for the general course in foods. **\$2.00**

**The Common Sense of the Milk Question**—John Spargo.

Deals specifically with the problem of producing and marketing clean milk. **\$2.50**

**The Book of Butter**—S. E. Guthrie, Professor of Dairy Industry in the New York State College of Agriculture, Cornell University.

Contains chapters on the History, Composition and Food Value of Butter; Cleanliness; Care of Milk and Cream; Cream Separation; Grading Milk and Cream, and Neutralizing Acidity; Pasteurization; Cream Ripening, From Churn to Package; Flavors of Butter; Storage of Butter; Marketing; Whey Butter; Renovated and Ladled Butter; Margarine; Definition of Terms; Testing. **\$2.10**

**Nutrition of a Household**—E. T. and L. B. Brewster.

A practical help in selecting agreeable and nutritious foods, without extravagance. Tabulates ordinary food stuffs to show their relative amounts of nutritive value. **\$2.00**

**Food Values**—Practical Tables for use in private practice and public institutions. By Edwin A. Locke, M. D.

Dr. Locke has collected from many sources exact information regarding the composition of all common foods, and has arranged it in such easily referred to style as to be readily applied to regulation of diets. Cooked, rather than raw foods, are used for food values. Actual weighing is unnecessary. **\$2.00**

**Nutrition and Dietetics**—By Winfield S. Hall, M. D.

A complete treatise on the foods essential for the upbuilding of the human body, with special reference to the diet indicated in disease. The foods needed by the body are discussed, classified and their preparation indicated; the use of foods in the body is taken up, as well as infant feeding and diet in health and disease. Valuable tables included. **\$3.00**

**Practical Dietetics**—With Special Reference to Diet in Disease. By W. Gilman Thompson, M. D.

The accepted method of dieting for each condition of disease amenable to dietetic influence will be found in this work. The scientific principles involved in each case are discussed, with brief tables and summaries of dietetic directions appended. Representative hospital and Government institution dietaries are examined; diets according to age, occupation, weight increasing or diminishing, etc., are included. Full index and cross references. Illustrated. **\$8.00**

**The Economy of Food**—By J. Allan Murray.

A popular treatise on nutrition, food and diet, written for students of domestic economy, cooks, dietitians, housekeepers and institution managers. The science of the chemical analysis of proteins and carbohydrates is presented in practical, easily understood fashion. **\$2.00**

**Practical Cooking and Serving** is a book of every day recipes and dishes that are suitable for ordinary and formal occasions, written by Janet Mackenzie Hill, who for a number of years has been head of the Boston Cooking School. It is up to date and practical. **\$2.50**

**The International Cook Book** contains nearly 3500 recipes, arranged in diary form, with a menu for each meal for every day throughout the year. It is indexed for easy reference. The author is Alexander Filippini, author of "The Table," which has reached a circulation of more than 50,000 copies. He was formerly of Delmonico's. **\$2.00**

**Home Canning, Drying and Preserving** is a manual of food conservation by A. Louise Andrea, teacher and lecturer on Home Economics, etc. It is clearly written and practical, and any woman can master the art of canning, drying and preserving food without further help. **\$1.50**

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## Rice Consumption Tripled by Use of Advertising

The Rice Millers' Association and the Associated Rice Millers of America, the latter being the advertising organization recently had their annual conventions at New Orleans. The president of the Associated Rice Millers of America, Frank A. Godchaux, declared that the short intensive advertising campaign which had been undertaken a few months ago had tripled the consumption of rice in the United States. He also referred to a new campaign which is being planned. He said in part:

"Rice is being consumed in the United States at the rate of seven pounds per capita, an increase of 4.53 pounds over the 2.47 pounds the average person ate during 1920.

"The advertising plan as carried out created a feeling and spirit of co-operation among the greatest number of jobbers and retailers throughout the country, and as a result has been placed on a proper cost-to-the-consumer basis.

"There is no doubt that through the thorough co-operation of the millers and producers during the next few years, we will see a very material increase in the consumption of rice in this country; and we will further see every available acre of land suitable for rice production placed under cultivation for the growing of rice, in order to meet the demands of the consumers. And in doing this the lands situated in the rice-producing sections of Louisiana, Arkansas and Texas will be greatly enhanced in value.

"The advertising campaign presently being worked out by the association will not only increase the consumption of rice by the present generation, but will be one of a broad educational nature. The science of cooking and the proper uses of rice will be brought home through the domestic science work that will be carried on through the schools and other educational channels, thereby creating a permanent demand for generations to come."

## Norway Market for American Packaging Machinery

Improved American packaging machinery which can meet German competition should find a market in Norway, according to a report issued by the American vice consul at Trondhjem. The canning of fish is the greatest mass-production industry in Norway, over 40,000,000 pounds of canned fish having been exported in 1920. A central packing plant would be interesting to all canners, especially in view of the very high wages and increasing foreign competition. The following types of machinery could be used, if they could meet German competition: Interior transporting equipment, such as trucks and conveyors; sorting machinery; fully automatic filling and measuring machinery, either by vacuum, pumps, or cups; can-making machinery; capping and sealing machinery; side and flat labeling machinery with automatic or hand feed; label-pasting machines; package-wrapping machinery; crating and mailing machinery; automatic sterilizing and washing machinery.

## Decrease in Canned Fish Export from Stavanger

A decrease in the value of the exports of canned fish from the Stavanger district, Norway, is reported, due to the poor catch of bristling in 1920, and also to the poor demand in the United States for the cheaper grades.

The value of the exports of canned fish from the Stavanger consular district to the United States during the first three months of 1921 fell from \$481,023, which was the total value of the shipments for the corresponding period in 1920, to \$115,467.

## Prune and Raisin Advertising Plans Are Commended

The "Schoolmaster," a department conducted in "Printer's Ink," says that the present advertising campaigns of the California Prune and Apricot Growers and of the California Associated Raisin Company, showing some of the uses to which their products may be put, are worth more than any amount of vague advertising under the general slogan of "eat more" of this and that. The "Schoolmaster" says:

"You can tell the public ever so many times to eat more, use more, or consume more of your goods, but you cannot expect the public to pitch in and boost your business simply because you need the help. But show the public what pleasure, comfort or convenience it will gain by so doing, and it is more apt to respond.

"A man may realize that prunes, apricots and raisins are good for him, but he doesn't want to face a steady diet of stewed prunes and a handful of dried raisins every day, but convince him that prunes when incorporated in a chocolate pudding are delicious and that a raisin pie is likewise, and he is ready to listen. The housewife, too, may like the idea of giving her family prunes, apricots and raisins for dessert, but when actual recipes are given, her interest is bound to be awakened.

## Big Increase in Peanut Importations From Orient

While early imports of peanuts from the Orient in 1921 have been light, unexpectedly large shipments were received in this country at the end of April and the beginning of May, which have amounted to more than was received during the six months preceding. During the week ending May 3, more than 5,000,000 pounds of shelled peanuts came into the port of Seattle alone.

The speculative influence of pending tariff legislation is considered partly responsible for these recent heavy receipts. Makers of salted peanuts and manufacturers of candy maintain that an insufficient amount of extra large sized peanuts were produced in the United States during 1920 to satisfy their growing needs, and the heavy call for Orientals has been for the large sizes, 28 to 32 to the ounce. The demand for domestic extra large is indicated by the fact that this grade is selling f. o. b. Virginia points at 12 cents to 12½ cents per pound, while the No. 1 size can be bought for 4½ to 4¾ cents per pound. Spot sales of 28/30 to the ounce size Orientals were made early in May at \$6.25 to \$6.50 per 100 pounds, f. o. b. Pacific coast.

## Belgium Offers Heavy Beef Cattle Market

Belgium is offering a good market for heavy beef cattle at present, according to advices received from the American consul at Brussels. During 1920 a large number of American cattle were purchased through the ministry of ravitaillement, but in view of heavy losses sustained on account of the depreciation of the Belgian franc, the ministry decided to make no further purchases for the account of the Government. Having ascertained, however, that large numbers of beef cattle were available in the United States at comparatively low prices, the ministry is reconsidering its decision. Quotations have been requested for the class of cattle known as "top native," c. i. f. Antwerp.

## Stevenson & Company Move Offices

E. A. Stevenson & Company, manufacturers of "Spredit" nut butter, have announced the removal of their offices to 44 Whitehall street, New York City.

## German Potato Flour Manufacturers Protest

German potato flour manufacturers are clashing with their home government on the score of restrictions placed upon their industry, and which the Government claims are necessitated by the condition of the country.

At a stormy meeting held in Berlin the following resolutions were passed protesting to the Government:

First: Against stringently enforced rules prohibiting them from using whole sound potatoes for the manufacture of potato flour.

Second: The association unanimously passed a resolution protesting against the coal curtailment issued by the Government, which makes it necessary for German potato flour manufacturers to increase the water content of their potato flour from 10 to 25 per cent thereby reducing its water absorbing power when blended with wheat flour by the bakers.

In a lively discussion the manufacturers expressed indignation for being forced to produce a food product and by the highest authorities recognized and essentially declared bread improver from raw materials unfit for human consumption.

The Government maintains its stand by pointing at the tremendous shortage of coal, it being compelled to furnish the Entente 24 million tons per annum leaving only 100 million tons for home consumption.

It further points out the necessity of using every edible potato for table purposes since it furnishes the most nourishment for the least cost to its already greatly undernourished population.

By forcing its potato flour and starch manufacturers to use the rotten, frozen and blighty potatoes for the manufacture of bread making materials the German Food Administration hopes to materially reduce its daily increasing deficit and save the nation from utter ruin.

## Maple Products of Pennsylvania Worth Almost Half a Million

Despite the fact that the open weather of the past spring was extremely detrimental to the flow of the sap in the maple trees, Pennsylvania produced maple products this year worth almost half a million dollars. The extent of the season's production is shown in a report prepared by the Bureau of Statistics, Pennsylvania Department of Agriculture.

The quantity of sap was only 60 per cent as great as the flow in 1920. The production of maple syrup this year is estimated at 158,760 gallons, which sold for an average price of \$2.25 per gallon. The season's production of maple sugar is estimated at 302,200 pounds, with a selling value of \$84,616, making the approximate value of all the maple products of the state reach the sum of \$441,826.

Somerset county, as in previous years, leads all other counties in the state in the production of maple syrup and maple sugar.

## Report Large Canned Corn Stock in France

Because of a disquieting rumor that there were very large stocks of canned corn available for export in France, the Department of Commerce has now ascertained from its commercial attache in Paris that of the total stock of 1,600 metric tons (80,000 cases) recently liquidated by the French Government, 300 tons (15,000 cases) were sold to the French retail trade and 1,300 tons (65,000 cases) were otherwise disposed of and presumably are available for export to the United States.



**Amy Smith says:**

"I find Moxley's Margarine gives excellent results in cooking, having tested it on corn bread, biscuits and cakes."

"I have also served it for table use and think only an expert could detect it from a good grade of butter."

Amy Smith is the head of the Cookery Department of the great Woman's magazine, "Today's Housewife."

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**Wm. J. Moxley Inc.**  
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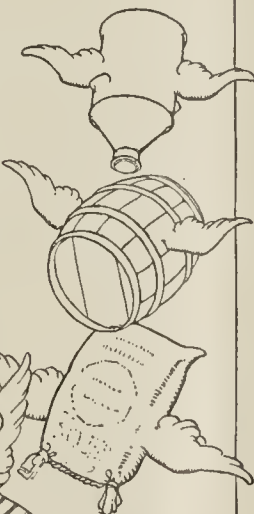
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### Census of Glucose and Starch Industry for 1919

Though subject to such change and correction as may be necessary from a further examination of original reports, the Bureau of Census, Department of Commerce, is issuing a preliminary statement of the general results of the 1919 census of manufacturers, with reference to the glucose and starch industry.

In 1919, 26 establishments were located in Maine, 6 in Minnesota, 4 each in Illinois and Iowa, 3 in Indiana, 2 each in Michigan and New Jersey, and 1 each in Connecticut, Florida, Kentucky, Massachusetts, Missouri, Nebraska, New York, Ohio and Oregon.

The statistics for 1919 and 1914 are summarized in the following statement:

Comparative Statement for the Glucose and Starch Industry, 1919 and 1914		
	1919	1914
Number of establishments .....	56	89
Value of products .....	\$186,256,000	\$52,615,000
Starch:		
Quantity—Pounds .....	783,513,000	620,764,000
Value .....	\$44,403,000	\$15,784,000
Corn:		
Quantity—Pounds .....	727,962,000	574,248,000
Value .....	\$40,558,000	\$13,785,000
Potato:		
Quantity—Pounds .....	16,477,000	23,540,000
Value .....	\$1,099,000	\$718,000
Other starches:		
Quantity—Pounds .....	39,074,000	22,976,000
Value .....	\$2,746,000	\$1,281,000
Glucose (including all sirups), value.....	\$80,608,000	\$18,541,000
Grape sugar:		
Quantity—Pounds .....	157,276,000	174,369,000
Value .....	\$9,315,000	\$3,766,000
Corn oil:		
Quantity—Gallons .....	12,516,000	8,862,000
Value .....	\$20,333,000	\$3,693,000
Corn oil cake and meal:		
Quantity—Pounds .....	61,662,000	143,001,000
Value .....	\$1,842,000	\$1,329,000
Stock feed, value .....	\$26,068,000	\$6,690,000
All other products, value .....	\$3,687,000	\$2,312,000

### Census Report on Rice Cleaning and Polishing

A preliminary statement of the general results of the 1919 census of manufactures with reference to the rice industry has been issued by the Bureau of the Census, Department of Commerce. It consists of a detailed statement of the quantities and values of the various products manufactured.

In 1919, 46 establishments were located in Louisiana, 14 in California, 14 in Texas, 5 in Arkansas, 5 in Washington, 1 in South Carolina, and 1 in Tennessee.

The statistics for 1919 and 1914 are summarized in the following statement. The figures for 1919 are preliminary and subject to such change and correction as may be necessary from a further examination of the original reports:

	1919	1914
Number of establishments .....	86	59
Value of products .....	\$90,038,000	\$23,039,000
Cleaned rice:		
Quantity—Pounds .....	1,062,813,000	674,872,000
Value .....	\$83,462,000	\$21,655,000
Polished rice:		
Quantity—Pounds .....	36,197,000	31,053,000
Value .....	\$966,000	\$352,000
Bran:		
Quantity—Pounds .....	142,984,000	99,403,000
Value .....	\$2,500,000	\$772,000
All other products: value .....	\$3,111,000	\$260,000

**Wholesale Grocer Combine Incorporated**

As the result of the consolidation of the two wholesale grocery firms, T. & E. Cumpson, and L. Doelman & Company, of Buffalo, N. Y., incorporation papers were recently filed by the Cumpson-Doelman Company, Inc. The new com-

pany has capital stock of \$200,000. Directors are Edward Cumpson, Leonard H. VanderMelen, Charles L. Doelman and Thomas Cumpson.

**Report on Czecho-Slovak Flour Situation**

Official information has been received, issued by the Ministry of Commerce and Agriculture of Czechoslovakia, in respect to their flour situation for 1921. The report reads:

"Some 75,000 tons of flour have been bought from England at a cost of 1,950,000 pounds sterling, about 8 crowns per kilo, exclusive of cost of transport. This flour is of three species: Flour ground in English mills and of standard English quality (30,000 tons); American, Canadian, and Australian flour (30,000 tons); and China flour (15,000 tons). With regard to the flour ground from Chinese wheat, about which there has

Slovak sugar to foreign countries are sufficient to meet in full the cost of the purchased flour."

**"Pet" Milk to Be Advertised**

The Helvetia Milk Condensing Company has increased its production facilities and will nationally advertise its product, "Pet" brand evaporated milk. E. O. Heyl has been made general manager of sales and will have charge of sales and advertising. The advertising will be handled by the Gardner Advertising Company, St. Louis.

### Predicts Sugar Will Reach Pre-War Level in Fall

A general downward tendency in the price of sugar, with the pre-war level to be reached by October, is predicted by Philip L. Wooster, purchasing agent for the Federal Sugar Refining Company, who returned recently from a six months' visit to France, Germany, Italy and other countries. During this tour, he made a survey of the sugar situation, and one of the conclusions reached was that Europe will not need to import any more sugar from the United States and Cuba after next October.

Discussing the outlook for the European crop of beet sugar, Mr. Wooster said that the Continental production would show an increased production of from 450,000 to 500,000 tons beginning next October by virtue of the increase in the area already planted and under cultivation. In Germany he said that a large acreage has been planted with sugar beets.

After next October, Mr. Wooster said that there would be no further importation by European countries of raw or refined sugar from the United States and Cuba, as the production there would be sufficient to meet the demand of the consumers there. The present tendency of prices is downward, he said, and it was reasonable to believe that sugar would be back at the pre-war price by October 1.

### Shortage of Fruits Predicted by Government

The State agents of the Bureau of Crop Estimates, United States Department of Agriculture, report that there will be a short fruit crop this year. The shortage will be fairly general east of the Rocky Mountains, except in portions of Michigan, New York and New England. The reports refer particularly to stone fruits, such as cherries, plums and peaches, but also indicate that there will be a material shortage of apples and grapes, though not as extensive as the shortage of stone fruits. It is too early, the statisticians say, to make an estimate of the probable yield of blackberries and raspberries. With the shortage of stone fruits it is expected that the fruit supply for domestic canning purposes will be limited in many sections. While considerable frost damage has occurred in some parts of California, the general outlook for deciduous fruits on the Pacific slope is still regarded as good.

### Colombian Milk Packers Serve Local Markets

The Colombian firm of Diego Martinez & Co., with headquarters at Cartagena, has a factory at Lorica, on the River Sinu, Colombia, where it is packing a "condensed" milk in powdered form, under the trade name "Tanques." This factory has a daily capacity of approximately 300 pounds. The market for this milk is found locally in the Atrato River region (Quibdo in particular), in the valley of the Sinu, and in Cartagena. The milk is packed in barrels of 150 pounds and is sold for an average of 12 cents per pound.

a contract with the Dutch firm of Muller & Company, for the supply of 10,000 tons of corn, which will be ground within the Republic, thus giving work to the home mills and securing a supply of bran, of which there is a shortage. The proceeds of the sale of Czecho-



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December, 1918.

January, May and July, 1919.

March, April, May, August and December, 1920.

THE AMERICAN FOOD JOURNAL

25 East 26th Street

New York





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## Manufacturers:

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As a form of service and without charge to you, The American Food Journal will place this material at the disposal of our readers in a way that will work to your advantage.

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JULY, 1921

# The American Food Journal

The National Magazine of the Food Trades



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By Dr. Lewis H. Haney

Director New York University Bureau of Business Research

### The Vitamine Doctrine and the Oleomargarine Industry

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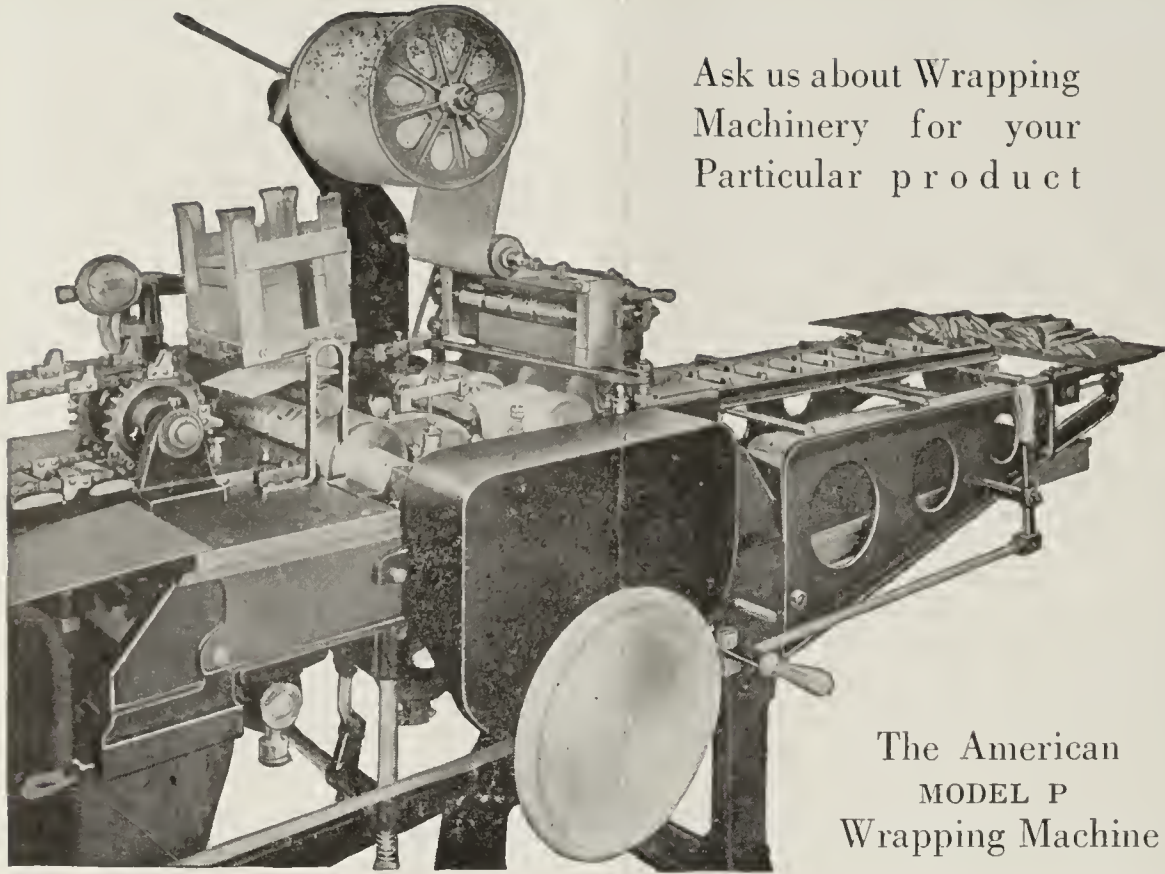
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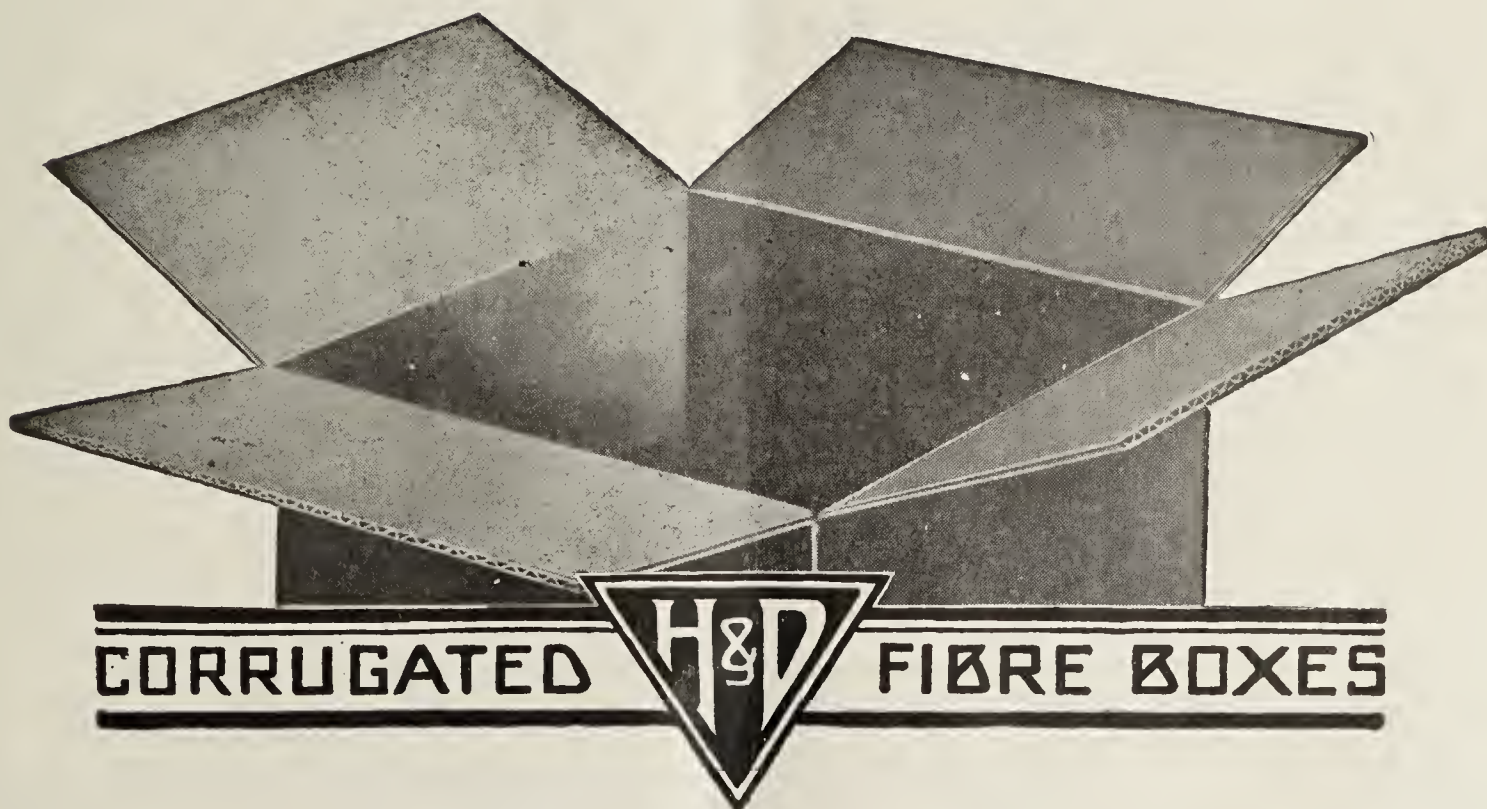
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The National Magazine of the Food Trades

Published Monthly by  
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Business and Editorial Offices: 25 East Twenty-sixth Street, New York

J. T. Emery, President

## The Editor's Column

### ASK FOR WHAT YOU WANT

Readers of The American Food Journal are realizing more and more that we want them to come to us for information relating to problems of food manufacture and distribution, and to suggest the type of articles they would like to have published in our pages.

We have just received a request, for instance, from the head of a big concern in New Orleans asking for an article on Government Regulations and Restrictions on Use of Saccharin in Food Products and Drinks. Splendid material for an article.

Again, the manager of a food products concern in Portland, Oregon, suggests an article on Food Specialties, their Preparation and Manufacture, written in a way to be of special interest to the smaller manufacturer.

The president of a big Pittsburgh company writes: "An article on the advantages of Powdered Milk would be interesting reading." The same writer goes on to say: "I am enclosing my check for \$3.00 for subscription to The American Food Journal. I wish to thank you for your many valuable suggestions, which I know will prove of great benefit to us. . . . As soon as I can see an opportunity to advertise in your valued publication I shall be glad to do so."

We appreciate this spirit of co-operation among our readers, because we feel very keenly that the American Food Journal can be of the greatest possible value to the food field only through this kind of close co-operation between publisher, manufacturer, food expert and distributor—all of us working toward the same goal. We feel confident that The American Food Journal is performing a real function in the scheme of things, and we welcome every sign that points to this spirit of closer co-operation.

May we have a word of suggestion or encouragement from you?

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Application for transfer to Floral Park, N. Y., pending.



# When the Line of Least Resistance Is the Line of Least Assistance

**W**ORD for word, the following is a paragraph from a letter written by the general manager of one of the largest industrial houses in America:

"The average advertising agency apparently spends about 99 per cent of its energy and its effort in securing an account and the other 1 per cent in handling the account after they get it. They all seem to be possessed with wonderful sales organization for securing clients, but I am very frank to admit that I have never been over-awed by the unusual ability, generally speaking, found in any advertising agency."

NOTE: Conforming to usual practice, name of writer and firm will be furnished on request.

These remarks are merely the opinion of one man. No one is better able to judge the services of an advertising agency than the individual advertiser himself.

In connection with the advertising of foods, it must be admitted that the easiest way to avoid the difficult problem of properly presenting the value of a food is to use the pretty picture. The phrase "appetite-appeal" often covers an amazing amount of negligence.

The duty of an advertising agency is not to follow the line of least resistance—but to furnish a service of real assistance.

## To Sell the Public is To Tell the Public

**T**O sell the public properly on a food, the advertising agency must have **technical knowledge** and **facilities** for securing and presenting fundamental selling ideas. An aggregation of mahogany desks and fixtures, copy-men and artists, "visualizers" and solicitors mean **nothing** to the manufacturer of a food product.

Regardless of lengthy and expensive conferences in well-appointed offices; enthusiastic banquets, eloquent speech-making and elaborate plans; the public's only knowledge of what you have to sell—is what you have to tell.

The connecting link between filling your packages and filling the public's stomach is the message you publish to fill its eye.

Every woman knows how good baked ham or baked beans look; she knows the appeal in a saucer of peaches; the aroma of frying bacon; the results of baking-powder cakes and biscuits; the flavor of jams, jellies and various soft drinks, etc., etc., etc.

But every woman cannot possibly know the actual health qualities of a trade-marked and branded food or beverage unless the manufacturer tells her about these qualities. This can be done only through the right kind of advertising.

If a food has actual nutritional value the public should know it. The appeal to the appetite has its limitations.

## Is Your Advertising Read Or is it Dead?

**T**HERE are two kinds of advertising today: Advertising that is looked at, and Advertising that is read.

To get the public to read your advertising it must contain news.

A leading New York newspaper editor said: "If a dog bites a man, that's not news; but if a man bites a dog—that's news."

If you're not giving the public news about your product—why should the public read your advertising? And further—why should it buy your product?

Good selling copy must be written—not alone pictured—and by a man who knows his subject.

The value of space is not governed by the publisher's rate card. A \$10,000 page in a national magazine is not worth \$10,000 until a \$10,000 message is printed on its white face.

Yet the skill and carefully considered thought of the competent writer can probably make the page do \$20,000 worth of work.

## Where Business Apathy Ends and Interest Begins

The foregoing remarks briefly cover a condition that a leading food manufacturer may wish to remedy. For this purpose the services of the E. W. Hellwig Company are hereby advertised.

The E. W. Hellwig Company are accredited advertising agents—a company composed of experienced food men. Its staff consists of men and women of wide experience in advertising and merchandising; in scientific and dietetic research.

This is an advertising agency that does not generalize. It specializes in selected fields—foremost among which are foods, and products sold through grocery channels.

Many interesting facts can be said about the E. W. Hellwig Company's business. But what is more interesting to you are the facts that the E. W. Hellwig Company can say about your business.

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# The American Food Journal

The National Magazine of the Food Trades

Vol. XVI

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No. 7

## Present Status of Nutrition and Its Relation to Food Manufacture

UNIVERSITY OF ILLINOIS  
LIBRARY-CHEMISTRY

### A Review of the Scientific Knowledge Now Available on Nutritive Values

BY VICTOR K. LA MER, A. B., Ph. D.

Department of Chemistry, Columbia University, N. Y.

THE physiologist tells us that food performs four functions in sustaining a race of people in good health and vigor. These functions are the operation, repair, growth and reproduction of the body substance. The results of nutritional investigations are agreed that these functions are not performed equally well by all the components of foods, but instead it seems that each component performs special functions of its own. In order that all of these functions may be consummated it has become well known that the diet must contain: (a) a mixture of digestible carbohydrates, fats and proteins to supply sufficient energy to operate the body mechanism; (b) the protein of the food must be of such a character that it can be transformed into body protein and therefore permit of maintenance and growth; (c) the food must afford an ash composed of twelve or more chemical elements in sufficient quantities out of which the skeleton and other tissues are built up and repaired; (d) lastly the three chemically unidentified accessories better known as vitamins A, B, C, must be present to promote growth and prevent the onset of the so-called deficiency diseases.

The first three of these requirements have been known and their importance granted for many years, but it has only been within the past decade that we have become aware of the presence of vitamins and the important role which they play in the maintenance of our health and well-being.

It is true that Adam and Eve ate protein and vitamins, and thrived and prospered in their way, and so do many of us today without our knowing any of the reasons why. But it is when a marked change in conditions necessitate radical changes in our dietary habits that we come to recognize and understand the full import of nutritional studies. An excellent illustration comes from the siege of Kut in 1916,<sup>1</sup> where the British troops were forced to subsist on a ration of white flour or biscuits, tinned meats and horseflesh, while the Indian troops at their side refused the horseflesh and ate barley flour instead. The former developed the nutritional disease beriberi, while the latter developed the entirely different nutritional disorder scurvy.

How could such a simple substitution as barley for horse meat produce so great a difference? Happily at this time the cause and prevention of these diseases were being investigated at the Lister Institute in London, and it was in large measure due to the knowledge that the members of that Institute had gained regarding the distribution and stability of the vitamins in question, that the British were

able later to equip and provision the armies sent to Russia in support of the anti-Bolsheviks, without the occurrence of these diseases which on previous occasions had seriously interfered with military operations in that country.<sup>2 3</sup>

#### Changes in Our Food Supplies

In America today we are being subjected to rather far reaching changes in the nature of our food supplies and treatments which they receive for the market. This is especially true of our larger cities, where the difficulties of transportation of perishable articles are greater. Consider for the moment the large per capita increase in consumption of canned, pasteurized, and more recently of dehydrated foodstuffs over what was consumed say ten years ago. Whether these changes will be entirely for the betterment of the community or whether they will constitute a mixed blessing is a matter of concern to every one. For this reason the food manufacturer is especially desirous of information which will enable him to maintain as high a nutritive standard for his product as possible or failing that how it is possible for him to educate the public to overcome any deficiencies which his products must of necessity contain lest they fall into disrepute among both the medical profession and the laity. An excellent example of the latter case arose in the outbreak of infantile scurvy which visited New York and other of our large cities. The cause was found to lie in the exclusive use of pasteurized milk in which product the antiscorbutic vitamin is partly destroyed. However it was shown that the deleterious nutritional effects of pasteurization could be overcome by the simple addition of fresh fruit juice in the infant's food.<sup>4</sup> In the case of some fruits like the tomato the canned form is entirely satisfactory but this is not true for all canned or dried fruits and vegetables, at least as they are manufactured today.

What effect dehydration has upon the nutritive value of the different foods to which it is being applied is a matter of intense interest and investigation. What we know of this phase of nutrition and food manufacture will be treated in detail under the discussion of vitamins.

But it would be difficult for us to appreciate this present status of nutrition and its relation to food manufacture unless we first take a short survey of the other important discoveries, the better understanding of which led up to the discovery of vitamins.

As most of us are well aware the chemist calls the sugars, starches and glucosides collectively under the term carbohydrate, since they contain hydrogen and oxygen in the

<sup>1</sup>Hehir—Proc. Asiatic Soc. Bengal. ccxii (1919).

<sup>2</sup>Chick and Hume—Med. Research Com. Report (British) No. 38.

<sup>3</sup>J. D. Comrie—Edinburgh Med. J. 24, 207 (1920).

<sup>4</sup>Hess—Scurvy, Past and Present.



ratio of 2 to 1 as found in water, in chemical combination with carbon, and also because all of them are broken down into one of the simple sugars like glucose on digestion. After they have been converted into simple sugars they are absorbed by the blood stream and brought to the tissues for decomposition with oxygen to form carbon dioxide and water by which process heat is liberated and energy becomes available for muscular work. Their sole function seems to be that of furnishing energy.

In like manner the fats are composed of carbon, hydrogen and oxygen but in the portions of compounds of fatty acids and glycerine. Following digestion and absorption the resulting glycerine and fatty acids that are set free are likewise burned to carbon dioxide and water vapor with the liberation of energy, but with the exception that the tissues prefer to burn carbohydrate.

When large quantities of the latter type of food are eaten the fats are not entirely burned but are stored up in the fat deposits of the body as a reserve supply and we say we take on fat.

Chemically the proteins are quite different in nature for they contain nitrogen and sulfur and sometimes phosphorus in addition to carbon, hydrogen and oxygen. Further from the work of Kossel, Emil Fischer and others it is known that the nitrogen is in the form of amino groups attached to fatty acids. These amino acids, so far identified, are eighteen in number and some are of rather complex organic structure. The proteins like lactalbumin and casein of milk, the proteins of meat and eggs as albumin, contain all of the important amino acids and are called complete proteins, others like gelatin are lacking in certain amino acids and are called incomplete proteins, concerning which we shall speak in greater detail later.

Since proteins contain carbon, hydrogen and oxygen they are sources of energy, but this is not their only function. Except for water, protein is the main constituent of our living tissues and it is from the food protein which is not burned when ample quantities of carbohydrate and fat are present that the growth, reproduction and repair of our body cells is maintained.

From which we see that in order that protein may be utilized for these higher functions it is necessary that it be spared from the fiery furnaces within us by the eating of sufficient energy foods in the form of carbohydrate and fat, instead of being burned only for the energy which it alone could furnish in running the body.

#### Normal Appetite a Safe Guide

Except for the hospital dietitian, or the person who must diet to reduce or acquire more flesh it has been found as a matter of experience, that the normal appetite, as a rule, is as good a guide to the proper quantity to eat as are the elaborate calorie tables of the dietitian. Instead we are more often liable to err in the choice and variety of our foods or in the proper methods of manufacture or cooking.

Further the calorie method of feeding does not furnish an infallible guide to the nutritive value of food for the tables showing the calories of energy each pound of food furnishes discriminate very markedly against dairy products and even more severely against fruits and vegetables, which as everyone knows have nutritive properties of a high order. From experiments to be described later it will be seen that the liberal purchase of these articles, expensive as many appear to be as sources of energy, is more than justified by the gains in health and well-being which the individual obtains from their content of mineral matter and vitamins, and yet mineral matter and vitamins do not count for a single calorie on the energy basis often used in rating foods.

The question of the relative proportion of carbohydrate and fat which the diet should contain was at one time considered an important problem, but recent experiments have shown that the one can be substituted almost entirely for the other, provided of course the supply of other nutrients is left adequate. This should be expected since pure carbohydrate and fat are composed of carbon, hydrogen and oxygen and function primarily as energy foods.

In practice, however, the complete substitution of fat for carbohydrate renders the diet so lacking in richness and flavor that we would soon tire of it and the reverse is equally true, for no race of people, except perhaps the Eskimo, is able to tolerate a diet composed exclusively of protein and fat. For these reasons it is not necessary to worry much about the relative proportion of these nutrients, since the diet would become quite unpalatable before any nutritional effect could be observed.

But what of the protein fraction? Since this component functions on the growth and repair of the body there must of necessity be some minimum below which these functions cannot be properly maintained. The setting of this minimum figure was at one time a matter of considerable debate but numerous investigations have shown that it is low, in fact the protein of the average American could be easily reduced to one-half or even one-third and yet contain more than the minimum amount, provided, of course sufficient fat and carbohydrate are eaten and the protein is of good quality. The setting of the optimum amount however is not a simple matter and to which no clean cut answer can be given, for on one side we see arrayed a group who contend, and perhaps not without some proof that a high protein intake, such as we get from a high meat diet, places an unnecessarily large tax upon the kidneys in eliminating the waste products of that metabolism; namely urea and uric acid. On the other side we hear the argument that the more successful nations of the world have been those which have used meat or dairy products quite liberally, and have in general overcome their brethren who partook of foods containing less protein. Whether or not their successes lie entirely in their high protein intake or whether it is due to some other factor in the diet is an open question, and it will remain so until some of our better equipped nutrition laboratories have been able to compare the vigor of rat colonies grown for generations upon diets low and high in protein but equally efficient in other respects.

For the present, then, we cannot do better than accept the advice of Prof. Sherman<sup>5</sup> who advocates that we employ a factor of safety of 50 per cent in calculating the optimum from the minimum figures.

#### Can Reduce Protein Consumption

If this estimate be accepted the average American can still reduce his consumption of protein by one-quarter of its present value by a more liberal substitution of milk, fruits and vegetables for meat products than is done at present. This change would unquestionably lead to a betterment of the diet in respects other than that of protein. So much for the question of the protein requirement, in favor of the more recent question of the quality of the protein.

About 100 years ago D'Arcet discovered his economical method of extracting gelatin from bones, and the French Academy, in a burst of enthusiasm, proclaimed that this discovery would solve the question of cheap protein for the poor. On the strength of this report the sick in the hospitals were fed gelatin instead of meat, eggs and milk. But the sick became sicker and the well instead of thriving declined. For a long time gelatin was held in disrepute, some going so far as to say that it was not a food at all. Due to the researches of Kaufman, Hopkins, and Osborne and Mendel we are now in possession of the reasons why gelatin does not nourish as was first expected that it should. Gelatin is a foodstuff but it is an incomplete protein. You will remember that proteins are composed of amino acids. Now the body has the power of synthesizing certain of these amino acids out of other materials but there are others which it cannot make in this way. The amino acids which the body must acquire pre-formed as such in the food are tryptophan, lysin and cystin. Gelatin lacks these three. However if an animal is fed up on gelatin and a small amount of some other protein such as we have in meat, milk or eggs, which contains

<sup>5</sup> Chemistry of Food and Nutrition pp. 383. Macmillan & Co.



these three essentials we get satisfactory nutrition as evidenced by the growth of the animals.

Nor is gelatin the only incomplete protein. Zein of corn lack tryptophan and lysin, and fails when it is the sole source of protein to give either maintenance or growth. When a small amount of tryptophan is added maintenance is obtained but not growth. It is only when lysin is added in addition that we get growth. This amazing discovery has served to clear up many of the previous discrepancies which sprang up between theory and practice. The custom has been to calculate protein by determining the total nitrogen by the Kjeldahl or other similar method and multiplying through by a factor (Nitrogen times 6.25 equals protein). This tells us very little of the nutritive value of the food. If practically all the nitrogen is in the form of glycocoll or glutamic acid as is the case in gelatin the protein can function in the main only as an energy food for it lacks those groups which are necessary for the repair and reproduction of the body tissue.

The chemist then must look for more than the amount of protein or nitrogen in a food in order to speak of its nutritive value. He must find out how the nitrogen is bound up in the protein. The Van Slyke method of analysis does this. By this method it is now possible to determine the percentage of different amino acids in the protein on a small sample in a reasonable length of time, and from the figures obtained it can be predicted whether or not such a protein is complete. In this country Dr. C. O. Johns, formerly of the Bureau of Chemistry, and his co-workers, have performed an excellent service in analyzing the proteins of cocoanut press cake and finding that they contained a higher percentage of lysin. Feeding experiments have confirmed their predictions that the press cake should support growth, and I understand that this product, for which there was formerly but little market, is now being used as a cattle feed.

Zein constitutes roughly one-half of the proteins of corn gluten which is deficient in lysin and tryptophan.<sup>6</sup>

A mixture of 25 per cent corn gluten and 25 per cent press cake formed an efficient mixture and also furnished an adequate supply of water soluble B vitamine.

#### The Nutritive Value of Peanuts

Johns and Fink<sup>7</sup> have further utilized this method of analysis in a manner of interest to the manufacturer of peanut products. They state that "a diet of war flour 75 per cent when fed as the only source of protein and water soluble vitamine . . . produced only one-third to two-thirds normal growth. Bread made from patent flour is still poorer food. Bread made from a mixture of 25 parts peanut flour and 75 parts of wheat flour furnished adequate proteins and water soluble vitamine for normal growth. The proteins of the peanut bread were utilized almost twice as well as those in the wheat bread." A bread containing 15 per cent peanut is very palatable and contains a protein mixture adequate for normal growth at a cost of less than one-fifth of the cost of proteins from animal sources. The press cake of peanuts has utilized as cattle food and to some extent as a fertilizer because its value as a human food has not been understood.

Suzuki,<sup>8</sup> the Japanese chemist, from a complete study of fish and animal proteins, has shown that salmon, herring and dried bonito are equal in efficiency to beef protein. Tunny fish and shark were not as good due no doubt to their lower lysin content. They made the further interesting observation that protein of beef canned ten years is equally as valuable as that of fresh beef. This is of course exclusive of other nutritive properties.

Hart and Steenbock<sup>9</sup> have shown that milk and whey were the best adjuncts to a corn diet for growing pigs, then came tankage, meat crisps and fish meal. The addition of other cereals were far less efficient in promoting growth.

Egg production was found by Philips<sup>10</sup> to jump from 61 eggs per year when fed upon a mixed grain and mash feed of bran and shorts to 135 and 140 eggs per year when meat scraps were given in addition.

While we are discussing the relation of adequate proteins to growth, it might be well to include something about the deficiency disease pellagra, which is so prevalent in some districts of the South. The statement is made that there have been 500,000 cases within the past 20 years and that 10 per cent of these have ended fatally. This disease occurs more especially among the poorer classes but the well to do are not entirely immune. It is characterized by an eruption over the backs of the hands, feet, face, elbows and knees. There is also weakness, nervousness and indigestion. The people having the disease live upon a one-sided diet consisting chiefly of biscuits, gravy, grits, rice, cornbread and sirup, with only a few vegetables, mostly roots and tubers, and no meat, milk or fruit. From a study of diets of this nature the scientists<sup>11</sup> who have studied this disease most carefully have concluded that it is at fault in respect to certain amino acids, mineral salts, and possibly an unknown vitamine. That the quality of the protein is at fault we may be certain from the recent experiments of Chick and Hume,<sup>12</sup> who were able to produce this disease or at least one very similar to it by a diet adequate in every respect except for the protein. The addition of 5 to 10 grams of casein of milk brought about "a dramatic cure where the skin lesions were most severe."

But we should not dismiss the protein question without a word regarding the place of the incomplete proteins in the diet. Simply because zein fails to contain certain of these important amino acids it does not follow that corn should not be included in the dietary. In fact quite the opposite is the case, for these types of protein are less expensive and can form the major portion of a diet provided of course that they are supplemented by some other food containing a high grade protein such as meat, milk, fish or eggs.

#### Chemical Elements

The chemical elements which the ash must furnish are calcium, phosphorus, iron, sulfur, sodium, potassium, fluorine, silicon, iodine, and possibly traces of others. From a careful study of diets of persons living in various parts of the U. S., Prof. Sherman has shown that deficiencies in calcium and phosphorus are most likely to occur. The reason is not hard to find. Bone is mainly calcium phosphate and organic matter and the growing person requires a large amount of these materials for this purpose. But calcium and phosphorus are needed after growth is completed for contrary to the usual belief bone tissue is alive and metabolizing. That is, it is constantly being broken down and replaced by fresh materials just as the proteins of the muscles are.

Milk and cheese are rich in lime and phosphorus. No other product compares with them. After the dairy products the fruits and vegetables as a class rank next, with the fats and sugars bringing up the rear. Meat is rich in phosphorus but it is woefully lacking in calcium. It is in this important particular that milk stands out so prominently, and in addition it more than holds its own with most other foods in regard to protein and vitamins.

But deficiencies in calcium and phosphorus do not necessarily have to be made up in foods containing them, for in the lower animals, at least, it has been demonstrated that the inorganic forms are assimilated very well. For instance, Evard, Dox and Guernsey<sup>13</sup> have shown that the addition of calcium carbonate and chloride to a corn and common salt ration fed pregnant swine resulted in greater size, more vigor, bigger bone and a better condition of the pigs.

Hart, McCollum and Fuller<sup>14</sup> report that the simple addition of calcium phosphate prevented the bone defects,

<sup>6</sup> Johns, Fink, and Paul. J. Biol. Chem. 41, 396-9 (1920).

<sup>7</sup> J. Biol. Chem. 42, 569-79 (1920).

<sup>8</sup> Suzuki et al. J. Tokyo Chem. Soc. 41, 381-413 (1920).

<sup>9</sup> J. Biol. Chem. 38, 267-85 (1919).

<sup>10</sup> Purdue Agr. Expt. Sta. Bull. 218 (1918).

<sup>11</sup> Goldberger, Wheeler and Sydenstricker — Public Health Rept. 35, 648-713 (1920).

<sup>12</sup> Biochem. J. 14, 135-46 (1920).

<sup>13</sup> Am. J. Physiol. 34, 312-25 (1914).



loss of weight and stupor which developed in swine on a phosphorus poor diet. However, until we have more definite information regarding the assimilation of these elements in organic form, and more especially phosphorus, by human beings it is better that we err on the safe side and use foods containing these elements. In this connection some recent experiments on a deficiency in heat treated milks by Daniels and Loughlin<sup>14</sup> should be of interest to the manufacturer of milk products. Rats fed milk boiled 1, 10 and 45 minutes respectively grow slowly, fail to attain the weight for normal animals and never reproduce. In these cases the milk was brought slowly to the boiling point (35 minutes) and then boiled for the time specified. Rats fed milk brought to the boiling point quickly and boiled one minute grew normally, and were perfectly nourished. Experiments were conducted on both condensed and evaporated milk. They state "the results of all the experiments on the long heat-treated milks point to the same conclusion, namely, that, in the process of heating the calcium salts are rendered more or less insoluble, depending upon the length of time. In this insoluble form they may be lost, owing to the fact that some of the precipitated material adheres to the container, as in the case of long pasteurized or slowly heated milk, while some, for example in evaporated milk, separates on standing. No data were obtained, indicating that either the fat soluble or the water soluble vitamine in milk is affected by heat treatment, nor is casein apparently affected. Rats fed superheated milk with calcium phosphate properly incorporated made nearly normal gains. The inferior growth of rats on the long heat-treated milk appears to be due wholly to the readjustment of the inorganic complexes. "The calcium phosphate was effective only when it was incorporated in a cornstarch paste in which it was held as a colloidal suspension. They attribute the normal growth of rats fed on undiluted condensed milk to the fact that this milk was thick and held the insoluble calcium salts formed in the condensing process in suspension. If these interesting conclusions should be confirmed they represent a loss in nutri-

tive value that is not being considered at the present time.

Iron functions as the carrier of oxygen in the blood where it exists as the red coloring matter hemoglobin. The question of the relative availability of the so-called inorganic iron and that of organic or food iron is still an open question, which is in need of further careful investigation due partly to the fact that the older analyses of foods were made under conditions which tended to greatly overestimate their iron content. The writer is also of the opinion that the divergent results obtained by previous investigators may be explained upon the basis of the vitamine content of the foods used which were not understood at the time.

Fruits and vegetables are the most important sources of food iron. The iron content of the outer layers of grains furnishes a strong point in favor in the use of whole grains in preference to their more highly milled products, in fact this statement is not confined to the iron content of the bran coats but is equally applicable to most of the other inorganic constituents. The blood left in meat contains a high percentage of iron but for some reason does not seem to be assimilated as well as that contained in eggs. Milk contains but very little iron but what is present seems to be well handled.

Less is known about the other inorganic constituents, for with the exception of common salt in the case of cattle feeding most diets are usually adequate in these factors. Recently<sup>15</sup> a curious malady, known as fetal athyrosis broke out among the swine raised in some sections of Montana. The disease is characterized by the birth of dead or nearly dead, hairless young, and on examination it was found that the thyroid glands, which are the ones involved in human goitre, were affected. The trouble evidently lies in the fact that the soil and plants of that region were deficient in iodine for the simple addition of small amounts of potassium iodide sufficed to counteract the disease.

<sup>14</sup> Ibid. 23, 246-, (1908).

<sup>15</sup> J. Biol. Chem. 44, 381-97 (1920).

<sup>16</sup> G. Ennis Smith, J. Biol. Chem. 29, 215-25 (1917).

## Find Method to Utilize Waste of Grape-Juice Factories Now Thrown Away

THE possibility of practical and profitable commercialization of the stems and pomace from the grape-juice factories which are now wasted is pointed out by experts of the United States Department of Agriculture in an investigation just published as a professional paper in Bulletin No. 952. The bulletin details methods of utilizing the waste from the grapes by manufacturing the stems into cream of tartar, the skins into jelly, and the seed into oil, meal, and tannin extract.

Inquiry among the grape-juice manufacturers of Eastern United States shows that the average quantity of grapes crushed for beverage purposes in the five years from 1914 to 1918 was 22,000 tons, and that an average of 660 tons was discarded in stems and 4,400 tons in wet pomace, constituting 75 per cent skins and 25 per cent seeds.

### Cream of Tartar from the Stems

From the above quantity of waste it is shown that the stems yielding 2 per cent of cream of tartar can be made to yield 13.2 tons of this product, which has considerable commercial value and utility.

The pomace after the seeds are separated can be made into a good grade of jelly by a simple process. It is calculated by the experts that 3,300 tons of wet skins would be available annually from the wet pomace, from which it is estimated that 19,800,000 eight-ounce glasses of jelly can be manufactured. There would result from this operation about 1,435 tons of dry residue possessing value as stock feed.

The grape seeds, comprising 5 per cent of the total weight of fresh grapes, or about 1,100 tons, can, after hulling and grinding, be manufactured into oil by two different methods known commercially as the pressure method and the solvent extraction method. The total oil content

of the seeds is estimated at 13 per cent, not all of which, however, can be successfully recovered. Taking 1,100 tons of seed as a basis, it is estimated that by means of the pressure or expeller method about 89.3 tons of oil and 526.7 tons of oil cake can be obtained. The 484 tons of hulls made available by this process are calculated to yield 48.4 tons of tannin extract. By means of the solvent extraction method about 132 tons of oil, slightly inferior to that of the pressed oil, can be obtained; also 968 tons of meal possessing a lower market value than the press cake from the pressure method. The total value of the products obtained from the seed by either of the above methods is practically the same.

Refining, bleaching and deodorizing of the oil will produce a very palatable condimental oil possessing qualities similar to those of the soy bean and cottonseed oil.

### Prolongs Use of Factories

Since scarcely enough pomace is produced at any one factory to pay for immediate utilization of the seeds and skins, it is considered practicable to dry the wet pomace, after which the seeds and skins can be separated by machinery and the product stored in bags until after the rush of the grape-juice manufacturing season. The material can then be manufactured into the products mentioned, thus enabling the plant to operate over a longer period of time and thereby cutting down overhead expense of operation.

It is further pointed out that the reclamation of the waste from grape-juice factories and the conversion of the same into commercial products of value possess possibilities far-reaching in effect, both as regards the consuming public and the manufacturers, and is worthy of the most careful and serious consideration as a conservation measure.



# Legislative Attacks on Milk Compounds

## Review of the Scientific Testimony at Recent Hearings Conducted by Law-making Bodies

**B**ILLS that sought to prohibit the manufacture and sale of "Hebe" and other compounds of skimmed milk and vegetable fats, under the guise of protecting public health and preventing fraud, have failed of passage in four States and passed in one State this year. Washington, New York, New Jersey and Pennsylvania killed the compound bills. In Wisconsin the bill was passed. Legislation of a similar character is now before Congress.

With the bill ostensibly based upon the issue of health, much of the testimony at various legislative hearings bore on the general subject of nutrition. Some of the country's foremost authorities on biological and physiological chemistry and on children's diseases contributed to what has become an interesting chapter in the study of food properties and their values in the human diet.

In each State arguments are practically the same as the wording of the various bills was almost identical. It is possible, therefore, to review the scientific testimony as a whole without reference to States.

Supporters of the bills depended for the most part on the argument that compounds are deficient in the fat soluble A vitamine. The inference was that the use of compounds in the human diet would result in diseases and malnutrition such as had been observed in experiments wherein rats were fed rations also deficient in this vitamine. The point was stressed that the growth of children is dependent upon the presence of fat soluble A vitamins in their food. Milk is especially rich in this food property. As milk constitutes the predominant food of infants the alleged use of compounds in place of milk, it was argued, would menace the health of the nation.

Opponents of the bills argued that the use of compounds in place of milk for infants was a malicious allegation on the part of the bills' supporters, without basis in truth or practice. It was declared that compounds are made for specific uses as cooking ingredients and are not intended for direct consumption as milk. Least of all are they intended for infant feeding, and labels were entered in proof of this contention, the labels bearing the inscription: "Do not use in place of milk for infant feeding."

### Produced No Evidence

The bills' supporters were unable to produce evidence in any State of an instance where compounds had been fed to infants in place of milk. On the other hand their opponents, in fairness to all, instituted surveys in thousands of homes in Philadelphia and Milwaukee by the regular staffs of various nursing associations. In their daily calls nurses asked housewives to let them see the canned milk they were using and asked whether or not compounds were fed to babies. In the thousands of calls not one instance was discovered where compounds were being misused by being given to babies.

Compound manufacturers, in addition to proving that their products do not compete with whole milk for infant use, presented an array of scientific testimony that combatted effectively the arguments of dairy interests who urged the bills' passage.

In the opinion of food experts who appeared for the compound industry, the vitamine issue has received prominence altogether out of proportion with its relative importance. One expert stated that no single food constituent, referring to the vitamine, deserves the distinction of being credited with the specific faculty of growth production. The general knowledge of vitamins is largely theoretical yet, and it was argued that anything that is so experimental should not be made the basis for permanent legislation.

Over-emphasis had been given, the experts stated, to the presence of the discussed vitamine in milk. The same vitamine is distributed widely in nature and is received through numerous foods that are in the daily diet of every family. One authority said that in the mixed diet of American and English people there can be no vitamine problem.

The experts united in testifying that there is no necessity for legislation against compounds from the standpoint of the dietitian, public health or economy. One stated that compound manufacturers are doing the public a distinctive service in making available the valuable food properties of skimmed milk.

### Dr. McCullom's Argument

Dr. E. V. McCullom, professor of bio-chemistry, School of Hygiene and Public Health, Johns Hopkins University, appeared for the dairy interests. His arguments against compounds are summarized as follows:

"We have proved conclusively by experimental investigation that milk or fat or substances like the yolk of egg, kidney fat, liver fat or the leaves of some vegetables are essential to growth. We cannot expect the human race to turn to liver and kidney fats, to the leaves of certain vegetables or to carrots or rutabagas for this substance when we have it so abundantly in milk and with all the other elements which are so vital and well adapted for nourishing growing children.

"Old methods of formulating diets considered proteins, carbohydrates and fats. In late years, the work of Osborn, Mendel, Funk and myself, as well as others, shows there is a new substance vital to health and growth. This substance is called soluble A by some scientists and a vitamine by others.

"In our studies with diets which were lacking in the peculiar growth-producing substance found abundantly in milk fat but not in vegetable fats, we invariably observed that the animals showed, after a period of five to seven weeks, a swelling of the eyelids and a marked inflammation of the eyes. If the faulty diet was persisted in the animals always went blind, and death followed a period of loss of weight in case the missing dietary essential was not supplied. A small amount of butterfat works like magic in causing the recovery of the eyes in such animals provided they have not gone too far. Where the eyes get well, growth in the young is resumed.

"Bloch, a Danish physician, has recorded forty cases among children near Copenhagen who had been fed exclusively on separator skim milk. He describes an eye trouble and says the children recovered promptly when given whole milk. A Japanese physician, Mori, recognized that animal organs, such as chicken livers, would cure these diseases when added to the children's diet. He also pointed out that fats from kidneys and liver possess the same growth-promoting substance as does butter fat. Both Bloch and Mori consider the disease of the eyes as essentially a fat starvation. Recent investigations of mine indicate that rickets in children is closely connected with the fat soluble vitamine, although there may be other factors operative as well.

"Nothing should be permitted to be done to milk which might result in a deprivation of the fat soluble vitamine to milk consumers. The products which are the subject of the bill under consideration would contribute to this end."

### Questions Vitamins' Importance

Dr. R. L. Stehle, assistant professor of physiological chemistry, Medical School, University of Pennsylvania,



showed inconsistencies in the views held by Dr. McCullom at various periods with regard to the subject of vitamins. While stressing the inadvisability of crediting vitamins with too much importance in dietary discussions, Dr. Stehle read from Dr. McCullom's own writings as follows:

"It is easy to see that there has become fixed in the minds of students of nutrition and of the reading public an altogether extravagant idea regarding the importance of the substances to which Funk gave the name 'vitamines'."

"The whole vitamin question is a matter of recent development," testified Dr. Stehle. "Theories have come and gone and the whole field is still in a condition of uncertainty and change. Dr. McCullom himself, a few years ago, was advocating a theory of the origin of scurvy which was at variance with the ideas of most other investigators and which he himself has recently abandoned. In his book, 'The Newer Knowledge of Nutrition,' published in 1919, he states on page 114:

"Of the diseases which Funk considers due to the lack of undened substances of this nature, namely, beri-beri, scurvy, pellagra and rickets, but one, beri-beri, has been shown to be due to this cause."

"In his testimony today Mr. McCullom has stated that he now believes rickets one of the four diseases just noted to be closely related to a deficiency of the fat soluble vitamin. What better evidence than these two instances of changed views within a few years can one desire concerning the variable nature of the vitamin problem?"

Dr. Stehle quoted other writings of Dr. McCullom in which the latter stated that "Any suggestions regarding the absence of a specific anti-achitic substance or deficiency of either fat soluble A and calcium as the primary agent in the production of rickets would be ill considered and might be far from the truth. At present it is only possible to say that the etiological factor is to be found in an improper dietetic regimen."

"It might be well to recall," said Dr. Stehle, "that milk is a valuable food aside from its fat content. If one were to divide milk into two fractions, the fat fraction and the remaining fraction, it would perhaps have to be admitted that the more valuable was the fat-free or skim milk portion. This contains proteins of the very highest value in nutrition of man and other animals and a mixture of mineral which, for completeness, is unsurpassed anywhere in any food material."

"Compounds of skimmed milk and cocoanut fat, which are the subject of contention at this hearing, cannot be criticized with regard to their essential value as food."

Dr. O. F. Ball of the Modern Hospital Publishing Company referred to the opinions of Dr. Alfred F. Hess of New York, a noted authority on children's diseases.

#### Distinction Undeserved

Dr. Hess calls the designation of the fat soluble vitamin as the "growth-vitamin" as unfortunate, "not only because this vitamin cannot be credited with this specific faculty but also because no single food constituent deserves such distinction. Observations similar to a lack of this vitamin, have not been made on infants so that we do not know, even approximately, how much fat soluble vitamin food is needed for normal growth. The stunting effect of a lack of antiscorbutic vitamin on infants has been definitely shown so that, with equal justice, this might be termed the growth vitamin. The sounder physiologic view, however, would be to regard no food constituent as entitled to be styled the growth vitamin or factor."

"For the laboratory worker there is temptation to draw sweeping deductions from animal experiments and to apply them en masse to the deficiency diseases of man. It should be remembered that the results of animal experiments are provisional and require the confirmation of clinical experience. In vitamin experiments there is especial danger of attributing failure of growth or nutrition solely to deficiency of this factor, taking it for granted that the dietary is adequate beyond question in salts, protein and all other constituents. It is quite possible that this inconsistency will be found to invalidate some experiments that have seemed conclusive."

Dr. McCullom referred to Dr. Lafayette B. Mendel of Yale University in his evidence. Dr. Mendel's testimony in the compound controversy was in direct contrast to that of Dr. McCullom.

#### Dr. Mendel's Opinion

"I believe that the restrictions contemplated by the proposed act are not warranted by our present knowledge and that they contain provisions which are unjust, if not actually inadvisable from the standpoint of public interest," testified Dr. Mendel. After explaining that there are numerous edible fats and oils, both of animal and vegetable origin, other than milk fat, which are universally admitted by nutrition experts to be thoroughly digestible and physiologically utilized and thereby true nutrients, he stated that "the presence or absence of the so-called fat soluble vitamin A can at present be ascertained only by feeding operations. Milk fat is by no means the sole source of this factor in the diet of those whose nutriment is not confined exclusively to milk and its derivatives. Skim milk has been reported to contain some fat-soluble vitamin."

Dr. Mendel referred to the presence of this vitamin in eggs, liver, so-called oleo oils and in a diversity of plant products. "There is no reason," he continued, "for assuming that a well-selected mixed diet cannot supply an abundance of this factor, even in the absence of milk fat."

"In view of these statements which I believe to be warranted by current scientific evidence, I can find no physiological justification for the exclusion of wholesome edible fats or oils other than milk fats from edible products containing centrifugated milk, provided they are not misbranded nor recommended for use as an exclusive food."

"They should not become the exclusive or even the predominate food of infants and growing young children. However, there is no reason to believe that, through occasional consumption even by children, such compounds would represent noxious agents. Inasmuch as their use is ordinarily confined to culinary purposes and not to infant feeding, the evidence at present available will not justify the conclusion that human welfare will be menaced by such use of vegetable fats. If wholesome edible products including skim milk can be made available as human food or cooking accessories at low prices, it may be regarded as an economic advantage and, in view of the excellent qualities of the proteins of milk and its lime salts, etc., as a dietary advantage."

#### Dr. Boch's Views

Dr. Joseph Boch, professor of biological chemistry at Marquette University, testified that cocoanut oil is an edible fat widely known and used in Europe for years. It approximates more closely butter fat than any fat of vegetable origin, lacking only the one constituent—vitamin. Cocoanut fat contains 10 per cent more heat value than butter fat, the figures being 3490 for the latter and 4008 for the former. Its main element as a food is its digestibility. Experiments with "Hebe" showed that, in the faeces of two boys, none of the fat escaped assimilation.

"The vitamin proposition is not of any great importance," said Dr. Boch. "We know very little of the chemical composition of a vitamin. I would not ask any brother chemist to define a vitamin. We are fortunate to have a free choice of food, and the deficiency that is found in one food is supplied by another. There can be no objection from the point of nutrition to compounds of vegetable fats and skimmed milk if the fat is easily assimilated. Milk to which sugar has been added, so-called sweetened milk, is much more dangerous than compounds. Skimmed milk is nutritious. Cocoanut fat is nutritious. Sugar can cause very serious physical and chemical disturbances."

Dr. J. P. Crozer Griffith of Philadelphia, one of the foremost authorities on children's diseases, said, in discussing compounds, that "any conceivable harm that could occur from their use could come only from continued use over a long period as an exclusive diet. Even should a compound, through any mistake or wilful perversion on the part of the mother, be given to an infant, I cannot see why its employment in this occasional and one might say, accidental way should be productive of harm. Olive oil and



other vegetable oils have often been given to infants as a food, and, in fact, have even formed a staple constituent of some prepared foods or special milk mixtures."

#### Takes Issue with Rickets Claim

Dr. Griffith took decided issue with Dr. McCullom on the latter's claim that butter fat was largely instrumental in preventing and curing rickets. "I have some very positive opinions, drawn from long personal experience as well as from current study. It has never been satisfactorily proven that butter fat, merely because it is an animal fat, will prevent or cure rickets. The experiments of Mellanby in England have been by no means universally accepted there or in this country. Experience shows that many infants cannot tolerate much butter fat. Even those who could developed rickets just as easily as when given milk mixtures with a low fat percentage. The well-known favorable action of cod liver oil in the prevention and cure of rickets seems to belong to it alone, so far as infants are concerned. Other animal fats do not share in the characteristic."

Dr. John Philip Street of the Connecticut Agricultural Experiment Station added his testimony to those who opposed legislation against compounds on the ground of health.

"The sewer is no place for human food of such nutritious value as skim milk," he said, outlining the mixture

of food properties that are found in it. Referring to the vitamine issue, he claimed that there should be no issue because, "in the mixed diet of American and English people, there can be no vitamine problem."

#### Add to Total Nourishment

Apart from the scientific testimony, the statements of compound manufacturers as to the development of their products are of interest to students of dietetics. They said that, through their advertising, they are building a new consciousness among American housewives of the value and availability of milk and its products as a cooking ingredient. Very little milk gets into the average American cooked dish. Americans consume per capita only .7 of a pint of fresh whole milk a day. With so small an average amount of whole milk going to each person in the homes of the country, scarcely any is utilized for cooking purposes. Water and some vegetable shortening have been resorted to for moistening and shortening up to the time of the arrival of compounds on the market. The growing use of compounds in the kitchen has added appreciably to the total quantity of nutritive substances received by the family through making available the proteins, mineral salts and some carbohydrates contained in skim milk plus the heating and shortening values of vegetable fats, food elements that would not reach the daily diet in the same combination were it not for compounds and their culinary use.

# Imitation Fruit Juice Beverages

## A Discussion of Federal Regulations Governing Their Manufacturing Labeling, and Sale

BY W. W. SKINNER

Chief Chemist, Water and Beverage Laboratory, U. S. Bureau of Chemistry

**EDITOR'S NOTE.**—The tremendous expansion in the past few years of the non-alcoholic beverage industry has brought on the market many imitation fruit juice beverages, which in some ways conflict with the provisions of the Food and Drugs Act and the food laws of various States. In this article W. W. Skinner, chemist in charge of the Beverage Laboratory, United States Bureau of Chemistry, tells of the methods employed to differentiate between true fruit beverages and the imitation. Food control officials and others interested in the problems involved will find Mr. Skinner's article of value to them.

IT may be a surprise to some to know that there are over 12,000 bottlers of beverages in the United States, doing an estimated annual business of approximately \$150,000,000, and this does not include soda fountain beverages. This volume of business gives the beverage industry an important place among our manufactured food products. That these products should be classed as foods there can be no doubt, but it may be a surprise also to some to know that an eight-ounce bottle of soft drink may contain as much as an ounce of sugar. The eight-ounce bottle would therefore have an energy value of 116 calories, which is about the energy value of 1 1-2 ounces of white bread, while a pound of canned peas has only an average value of 255 calories.

There are three distinct types of fruit beverages: (1) straight or modified carbonated or still fruit juices, (2) still or carbonated beverages, made from fruit concentrates as a base, with or without essential oils, or fortified with artificial or synthetic flavors, and (3) imitation fruit drinks, generally carbonated, flavored with imitation flavors, and colored and nephelotized in imitation of real or imaginary fruit products.

#### Demand Has Greatly Increased

The demand for fruit juice beverages has increased very greatly in the last three or four years. This is due to sev-

eral causes, one of which is no doubt the knowledge which the public has obtained of the valuable antiscorbutic properties possessed by certain fruit juices, notably the citrus fruits, and the relation of these properties to the health, specially of children. This has led to the development and sale of many imitation products, flavored either with essential oils or extracts made from them, or largely from synthetic products, but, to take advantage of the growing popularity of fruit juice products, advertised in a manner very deceptive, claiming or inferring in some cases, either on the label, or in the advertising matter in billboards and in magazines that the product is made from whole ripe fruit. The deception of a name implying fruit juices with pictures of the fruit and flowers of the fruit, the juice or pulp of which is supposed to be used, is frequently further heightened by cloudiness or turbidity of the product, either deliberately produced by the use of some gum or other emulsifying agent or by the employment of some of the non-alcoholic emulsion flavors made from essential oils, water and an emulsifying agent.

When such nephelotized or turbid products are colored to represent the true or supposed color of the true fruit juice, the deception is further enhanced. I think it but fair to say that some of these imitation beverages are excellent products, skillfully produced and perfectly bottled



and are a distinct addition to our list of cooling refreshing beverages, but I can see no reason why they should be permitted to be exploited and sold under a lying label that deceives the consumer. In addition to being unethical and illegal, the attempt to build up a business upon deception is in my opinion poor business psychology and poor business policy, since the consumer is sooner or later fully informed about a product, and if he has been deceived, his enlightenment, when it does come, and his naturally resultant grievance is certainly no business asset. It seems to me the shrewd business minds back of this development would observe the effect of such attempted deception in other lines of business and learn a lesson from similar experiences. For instance, the case of oleomargarine, to cite just one of the many instances.

Oleomargarine, as you know, when properly made, is an excellent product. We produce in America brands of oleomargarine the equal, if not the superior, of any in the world, and we can produce it cheaper than anywhere in the world. Yet, what is the situation? We consumed in America in 1920, 3.8 pounds of margarin against 16 pounds of butter, while Denmark consumed in 1913, 34 pounds of margarin, against 19 of butter, and Norway in 1914, 24 pounds of margarin against 14 of butter. Why this low consumption of margarin in America? Partly, I believe, because of the deception originally practiced in selling margarin for butter, which resulted in public resentment which has been translated into laws which have hindered its sale and restricted its use; whereas I firmly believe if in the beginning it had been sold wholly on its merits and not in a deceitful and misleading manner, its consumption would have developed comparable with the consumption of other countries such as England and Denmark, which are also large butter consuming countries.

#### Safer to Develop Products on Their Merits

So with the types of beverages under discussion. It seems to me that it would be a far safer and saner policy to develop them for what they are on their merits, rather than upon the unsound policy of a deceptive and lying label and upon unethical newspaper and magazine advertising, in which too often there is evidence that the exploiting of a good and really desirable product has been referred with power to act to some romancing advertising writer, who is perhaps guided only by a modified David Harum philosophy, that is, "Do the other fellow as you think he would like to do you, but do him first," which is sure in this day and age to bring the product within the range of the big stick of regulatory laws, wielded either by or both State and Federal officials.

The most recent noticeable development of this deception is in products sold in imitation of our old and deservedly popular citrus fruit drinks, orangeade, lemonade and limeade. The Bureau of Chemistry issued a ruling several years ago defining orangeade as a product "consisting of orange juice, sugar and water, flavored with more or less orange peel." The past year this was modified and issued an item 357, as follows:

"Terms such as 'ade,' 'squash,' 'punch,' 'crush,' and 'smash' can be applied properly only to beverages, either still or carbonated, which contain the juice or edible portion of a fruit. These terms should not be applied to products flavored only with essential oils or essences, unless plainly labeled as imitations. \* \* \* It is further held that any turbid or 'cloudy' orange or other fruit-flavored beverage, which does not contain either an appreciable quantity of the juice or edible portion of orange or other fruit named, should be labeled plainly as imitation."

#### Many Seizures Have Been Made

Numerous seizures have been made of these improperly labeled imitation fruit juice beverages. Some of these actions have resulted in a change of the product name and in some other cases fruit juices are now being used in the preparation. Many of the so-called fruit drinks are made from concentrates or sirups manufactured by producers in

some of the larger cities. These concentrates or sirups may be made with fruit juice or pulp, which may constitute as much as 50 per cent of the product, but this sirup may be so fortified with essential oils or extracts that when the bottler gets it he simply dilutes it with simple sirup to such a degree that if the diluted sirup is added at the rate of one ounce to the bottle of finished beverage, the original fruit juice has been so diluted that it has almost reached the point of extinction. So that while the concentrate, which has been shipped in interstate commerce, does contain 50 per cent of true fruit product and is properly labeled, it does not follow that the finished drink is entitled to be called a fruit drink at all. This naturally suggests the question, how much fruit product should a beverage contain to be called a fruit drink? My opinion is that a fruit "ade," "squash" or "smash," etc., should be comparable in composition to the original drink for which the name was employed; that is, lemonade, orangeade, etc., such a product as is served at the soda fountain or in the home, and made from the fresh pressed fruit. A 10-ounce glass of lemonade so made contains on the average about one half of a good sized lemon, which is equivalent to about 15 cc. of juice. Neither the Standards Committee nor the Bureau of Chemistry has attempted yet to fix any limit to the amount of juice which a lemonade, orangeade, or limeade shall contain. We have been content merely to say in reply to inquiries that it should be an appreciable amount of juice, and it may be necessary at some time to submit the matter to the courts to say what is an appreciable amount, sufficient to warrant the use of such names as "ade," "squash," "smash," etc., to define a beverage, when the label directly claims, or by implication suggests the product to be a fruit juice preparation.

#### The Labeling of Imitations

We have recently examined in the Bureau of Chemistry a large number of concentrates and sirups sold as orangeade bases, such as are used at soda fountains and by bottlers, and have found most of them to be free from any orange juice, and the products to be undoubtedly misbranded. Such products were generally made with oil of orange, gums and artificial color, and are clearly imitation products. In this connection, I should like to call attention to the provisions of the Food and Drugs Act, which bears upon the labeling of imitations. Section 8, paragraph 1 of the act unequivocally states that a product is misbranded if it be in imitation of another article. This apparent anomaly in the law, that a product is misbranded although it may have no brand whatever upon it, may seem strange, unless it is understood that Congress for purposes of the act, determined that all actions under its provisions should be classed as either adulterating or misbranding. Hence, if in fact a product is an imitation of another article, it comes within the prohibitions of the law, and the intent of the producer has nothing to do with it. Thus, a sweetened orange colored drink which smells of orange, is flavored with orange oil, and is turbid, is in fact an imitation of an orange juice product, that is, orangeade. But there was an amendment added to the Food and Drugs Act in the form of a proviso to paragraph 4, of the same section, providing explicitly how imitations shall be labeled to keep them within the proprieties formulated by the act. And this proviso states that imitations are not to be regarded as misbranded if they are "labeled, branded or tagged so as to plainly indicate that they are \*\* imitations \*\* and the word \*\* imitation \*\* is plainly stated on the package in which it is offered for sale." Therefore the law is mandatory and specific that upon the label of all imitations, there must appear plainly the word "imitation." No other similar words will do. Further in addition to the word "imitation" it must be plainly indicated on the label, wherein the product is an imitation. The Bureau has held this to mean that there must appear on the label a statement of those ingredients such as color, flavor, acid, etc., which give to the product its principal characteristics as an imitation.



# The Wholesale Grocer and His Competitors

## Dr. Haney Believes Jobbers Should Push Private Brands Exclusively or Work Harder for Manufacturers

By DR. LEWIS H. HANEY\*

Director New York University, Bureau of Business Research

THESE are times for heart-searching among wholesale grocers. While no informed man believes for a moment that the wholesaler is doomed to extinction, at the same time no informed man will deny that the high position he has so long occupied is threatened. It, therefore, behooves us to consider carefully what that position is, and to appraise the threatening forces, in order that they may be met most intelligently. In this way the necessary adjustments can be effected with the least disturbance to the trade and to the public weal.

The wholesale grocer, in common with other wholesalers, renders numerous and distinct services which we need not describe in detail, although, did time permit, I would like to emphasize the importance of economies in transportation which his operations afford. Suffice it to say that these numerous services fall into two groups: the merchandising services and the warehousing services, and that it is the merchandising function of the wholesaler that is under attack. It is your position as buyers and sellers of merchandise that is threatened by the policy of "direct selling" by manufacturers and by the chain-store systems. If you are willing to reduce your business to that of assembling, warehousing and delivering food products you will meet with little opposition; but I do not believe that you as a body are ready to become mere manufacturers' agents or mere warehousemen. I am sure you want to retain a voice in the decision as to what you shall buy and sell, when you shall buy and sell, and what margin of profit you shall receive for your services and risks. Let us examine, then, the opposing forces.

As I see it your chief rivals in merchandising are the marketing manufacturer and the chain-store. While neither one can put you out of business, they can injure you in competition and can modify your business considerably, especially in city trade. Indeed, I have been advised by a large wholesale grocery establishment in one of our largest cities that the chain stores have so increased their trade that this wholesale grocer now does approximately 50 per cent of his business with restaurants, hotels and public institutions.

Here I would pause long enough to emphasize the fact that the interests of the wholesale grocer are inseparably bound up with those of the "regular" retail grocer. Your chief advantage in competition with those agencies which are seeking to do the jobber's job lies in your ability to supply the regular retail grocer with a full line of the products he handles and which the housewife buys as "groceries." You should, therefore, see to it that the retail grocer survives and thrives. You know better than any outsider what you can do to help him, but I would venture to suggest two general lines of assistance: First that you remove the ground for his complaint that the wholesaler makes price discriminations in favor of his—the retailer's, competitors, and second that you do all in your power to educate the retailer. The average retailer has much to learn from the chain-stores. I know of no better work that could be done by wholesale grocers than to make plans for a drive to improve the merchandising methods of retail grocers, what and how much to stock, salesmanship and window dressing, etc.

Let us inquire what advantages your most dangerous competitors have. In the case of the chain-stores, these

advantages I believe lie chiefly in the relative simplicity and standardization of their business. They have a more limited line of grocery products than is carried by most wholesale grocers, which enables them to concentrate their efforts and to standardize their merchandising methods. This makes for less waste both in buying and in selling. Also through their stores they know the demand more closely and accurately than you are able to do under present arrangements and at the same time can more closely control retail stocks. Thus they are able to get along with smaller working capital in proportion to their sales and to secure a more rapid turnover. They are also free from the troubles which most of you have with your salesmen, as for example the cutting of prices which arises when you give your salesmen cost prices and virtually authorize them to sell your goods for what they can get. I do not need to dwell upon the fundamental importance of rapidity in turnover. The statement has been made to me by a well informed student of the grocery business that in at least one city the chain-stores are able to turn their stock three times as rapidly as one of the large wholesale grocers. You can readily see that if this is true the chain-store can do business on a smaller margin of profit.

The question now arises, can the wholesale grocer himself not take a lesson from the chain-store methods? I think he can, and I would suggest as the best means for making improvement that he hang over his desk as a motto what we may call "The law of the three izes:"

1. Departmentalize.
2. Centralize.
3. Standardize.

Then if he will adopt the correct policy in the payment of his salesmen and take to heart what I have said concerning his relations with the regular retail grocer, he need fear nothing from the chain-store.

By "departmentalize" I mean that you divide your stock into departments, so that you can keep closer track of your business. The small jobber needs relatively few departments; the large one may need thirty or more. It is perhaps impossible to know the cost of each of the thousands of individual commodities which you handle, but I believe that you can ascertain the approximate cost of handling the goods by logically arranged departments. In any case it will easily be possible to know the turnover made on the goods in each department. Then it will be possible to arrange for more logical and uniform gross profits and margins of net profit by these departments, and I may add that it will facilitate the introduction of improved methods of paying salesmen.

By "centralize" I mean that you concentrate your selling efforts. Many of you, through pride or force of habit, are carrying lines which show so small a margin of profit or such a slow turnover that they should be abandoned. I realize that in some cases you may feel it necessary to carry an unprofitable line in order to retain the good will of your trade, but if so you should do it deliberately for that purpose and consider it as a charge to advertising. I would point this remark by reminding you that this is the policy followed by the chain-store, as they do not attempt to carry everything under the sun but endeavor to make a market for a relatively few profitable lines. Under the head of centralize I would also emphasize the importance of considering a centralization in your territory. Are you sure that you are making money in each of the ter-

\*An address delivered to the Ohio Wholesale Grocers' Association.



territories in which you have a salesman? Would you not increase the net profits of your business by centralizing your efforts in a smaller territory, abandoning that outlying district to your competitor who is more advantageously situated for working it?

"Standardization" is a phase of centralization. I merely suggest that you take your cue from the chain-store and go over your books with the idea of simplifying and reducing the number of kinds and sizes that you carry.

In these ways you can decrease your selling expenses and increase your rate of turnover.

Speaking of turnover, the importance of this phase of business cannot be too much emphasized. By "turnover" I mean the quotient arrived at by dividing your sales by your average inventory. Obviously, therefore, you may increase your rate of turnover either by reducing your inventories, or by increasing your sales, or by doing both. First, your inventories may be reduced by more efficient buying, either in the way of securing better prices or by securing of better adjustment of stock to sales. The last point is probably the more important, and in that connection I would stress the importance of keeping adequate stock records. The average wholesale grocer does not consider carefully enough his turnover when he is buying. The price is not the whole story. Let me illustrate. Not long since I went through a jobber's warehouse in a southern city. In one room piled on the floor was a large quantity of pickles in bottles. The bottles were lop-sided and the labels were all askew. A more unsaleable lot of materials you never saw. It had been purchased because it was cheap! Even the saving that you will make on a large purchase will be more than eaten up by the cost of carrying the large quantity if it is material that does not turn over rapidly. The moral is do not stock up with goods which do not move even though they look cheap—for their cheapness will not help if they remain in your warehouse.

On the selling side the rate of turnover may be increased by maintaining or securing better prices or by increasing the volume of goods sold.

Turnover is thus the essence of merchandizing; for the gist of the matter is that to secure the best turnover one must buy only those things that will sell and will move with reasonable rapidity.

The great importance of turnover at the present time is that upon it depends the amount of overhead and general or administrative expenses which must be charged for the handling of goods. That is why these expenses have been called "turnover expense." The more times you turn your stock the less per unit of goods handled will be the charge for interest, rent, taxes, administrative salaries, and various other items of expense which are more or less fixed. The expense of warehouse labor, salesmen, etc., may be adjusted to the volume of business, but the more general items go on regardless of volume. In these days when your efficiency is being put to an unusually severe test, a matter of 1 per cent on sales may mean the difference between a profit and a loss. Turnover is vital.

It seems, however, that some wholesale grocers need to be reminded that turnover alone means nothing. The desirability of a rapid turnover depends upon the existence of a profit on each turnover. Unless there is a profit on each turnover there is nothing to be gained by it. If you are actually handling tobacco at 5 per cent, and if it costs you more than that to handle it, the more times you turn over your tobacco stock the larger your loss is. You should first be sure that any line of goods is netting something above the cost of handling, and then—and not until then—seek to get the largest possible total profit by turning it as many times per annum as skillful merchandising will permit. You should do both your buying and your selling with an eye on turnover.

It has become commonplace of late to urge the wholesale grocer to keep the profits that he makes, the idea being that he should not ask for larger profits but that he should hold fast to the small profit which he receives; and one

of the chief means for accomplishing this end is to cease the vicious practice of allowing the salesman to run the business. I will venture the assertion that a large part of the jobbers give the salesman the cost price on the goods which they sell. I will also venture the assertion that many do not pay your salesmen with any close relation to the net profit on the goods which he sells. Both of these sins of omission are serious. I do not need to tell you that when you give a salesman the cost you put the suggestion into his mind that he may sell at a price but little if any above that cost. Also it is apparent that if you pay your salesmen on the straight salary basis he is not concerned whether he sells sugar and flour or coffee and baking powder. Surely the conclusions are obvious. To the greatest practicable extent you should quote your salesmen the actual prices at which they are to sell and you should pay them on the basis of a minimum expense account plus a commission based on the net profits which they realize by their sales. I know that some refinements and modifications are required to make such a method as I suggest workable, but I think that the general proposition is plain.

At the recent meeting in Chicago, which I attended, an educational committee was provided for, and I am glad to say that one of the plans which this committee has in mind is to put forth a standard scheme for departmentalization and for the payment of salesmen which it is hoped will appeal so strongly to all wholesale grocers that it will become the uniform practice of the trade.

#### How to Meet the Marketing Manufacturer

Thus far I have confined my attentions solely to the chain-store, although much that I have said will apply to the competition of the marketing manufacturer. As I turn to the problem which is presented by the relation between the manufacturer of food products and the wholesale grocer, the first thought that always comes to my mind is the need for analyzing the situation and classifying the different cases. The wholesale grocer is finding it more and more difficult to talk generalities and averages. It is becoming necessary to "show" the manufacturer. For example, you are talking business with a manufacturer and the question of the discount arises. You tell the manufacturer that it costs you 10 per cent to do business. Is the manufacturer satisfied? Often he will not be. What he wants to know is not what it costs you to do business but what it costs you to handle his particular product. He will argue that on account of the advertising and salesmanship which he furnishes, it costs you less to handle his product than it does others; and you have not the information which would enable you to meet his argument. It may be that you are dealing with a tobacco manufacturer who insists that you could handle his product on a 5 per cent basis. You may be absolutely convinced that this is impossible, but you have no adequate figures to back up your conviction. Average costs will not go.

The moral of this situation is that the wholesaler urgently needs to departmentalize his business in such a way that he can know the approximate cost of handling each different class of goods, taking the turnover into consideration. More than that he needs to understand and to classify the services which the manufacturer of food products and the wholesale grocer perform jointly in distributing the different classes of goods. Some manufacturers do more for the jobber than others do. The products of some turn over so rapidly that the jobber can afford to handle them on a smaller margin of profit than others—though each line should bear its due share of operating expense and show some net profit. The basis for such a classification will be found in an intelligent departmentalization of your business.

To centralize or concentrate your selling efforts will also help in dealing with the manufacturers. I suspect that many wholesale grocers are attempting to carry too many lines of manufactured food products for their own good.



This not only slows up the turnover, but also unnecessarily complicates relations with manufacturers.

The basis of the mutual dissatisfaction which exists between manufacturer and wholesaler lies in the difficulty of pushing advertised brands to the satisfaction of the manufacturer. The manufacturer spends large sums in a national advertising campaign and he expects the jobber to follow up this advertising campaign by vigorously pushing his wares. The jobber, however, is handling similar products made by other manufacturers, and perhaps even has a line under his own house brand. He is willing to give what seems to him a reasonable amount of attention to the manufacturer's brand, but he cannot devote his sole attention to it. Then the manufacturer puts in some specialty salesmen and perhaps begins taking orders for drop shipments. Finally he decides to sell "direct" to the retail trade. On the one hand the manufacturer claims that the jobber does not give him a sufficiently active representation and on the other hand the jobber insists that the manufacturer makes unreasonable demands and does not give him a fair margin of discount.

One of the criticisms often made of the wholesale grocer is that he pays too much attention to price and too little to quality. Recently I was talking with a manufacturer of rubber rings for fruit jars and he was inclined to blame the jobber for buying the inferior rings which the company made for the jobbing trade and endeavoring to sell at the same price as the manufacturer got for his best grade of ring sold under his own brand. As a result this manufacturer is ripe for considering the adoption of a policy of direct selling. On the other hand, I may say that too many manufacturers have got themselves into a frame of mind in which they consider identification, branding, and advertising as synonymous with quality. This does not necessarily follow.

The sales manager of a large manufacturer in a recent article in "Printer's Ink" criticized jobbers along this line and advocated that manufacturers combine in small groups for the purpose of establishing local distributing agencies. His article has considerable interest. He first asks what market has a jobber ever created, or what food product has ever been originated by a jobber, implying a criticism of the jobber's activity in selling. He then implies that the jobbers expect the manufacturer to create a market so that they can step in and supply that market with their own private brands. Finally, he predicts that the manufacturing jobber will be forced to operate exclusively on his own private brands, and in this connection he advocates the establishment of groups of manufacturers of local warehouse companies at distributing points, which warehouse companies would hire salesmen to canvass for the company and would sell only the products of the combined manufacturers. Under this scheme the jobbers who do not sell exclusively their own private brands might receive a jobbers' discount on the goods of the combined manufacturers, but those who handle their own brands could expect to get no more than enough to pay for the bare service of filling orders.

The writer's statement is as follows:

"The jobbers who would only pick up goods from the warehouse to fill orders, and who were recognized manufacturers with competitive brands of their own, would receive pay for just the service rendered; while jobbers who really co-operated by quoting the lines, carrying stock, etc., and functioning in the regular jobbing way without competitive brands of their own, would receive pay in proportion to such services."

To me it seems that the time has come to take a stand one way or the other on the issue here presented. Either the wholesale grocer should decide to handle and push his own brands to the practical exclusion of manufacturers' brands, or he should make the other decision and confine his attention to manufacturers brands exclusively. It seems that the adoption of one or the other of these courses by the various individual wholesale grocers would greatly clarify the situation.

There would still remain, however, the question as to

whether the general relationship between the manufacturer and those jobbers who handle the manufacturers' brands would be satisfactory. What can be done to clarify and improve the business relations between the manufacturer who sells through jobbers and the jobbers who handle only manufacturers' brands of prepared food products? Even if we assume that the jobber who has his own house brands ceases to handle manufacturers' brands, there is still doubt, if the others can satisfy the manufacturer, though the problem is much simpler. Some manufacturers may want the pure jobber to put more effort into pushing their goods; others may want the pure jobber to merely "carry stock and quote." The question boils down to this: Is the jobber to be an active merchandiser of manufactured food products or is he to be a mere manufacturer's agent? Straddling on this point has become difficult, if not impossible. You can take either course that your temperament and ability makes most natural. Personally I am inclined to favor the adoption by wholesale grocers of a more active selling policy, to the end that they may meet the manufacturer's complaints by giving a more real service in salesmanship. This would require a higher grade of salesmen and more active and intelligent management than is sometimes now available. It would probably mean that each wholesale grocer would have to concentrate on a relatively few lines of manufactured products. He cannot give sufficiently intensive salesmanship when he tries to handle everything. It may mean more exclusive agencies. Some illustration of what I mean may be found in the policies adopted by the Philadelphia wholesale grocers; although I do not entirely approve of the so-called Philadelphia plan.

On the other hand, if you do not desire or are not able to enter upon a higher level of selling activity you may be content to fall into the position of the mere manufacturer's agent and act as his assembler, warehouseman and delivery agent. As such you would expect a relatively small margin of profit and would have to depend upon rapidity of turnover to make a satisfactory annual net earning. The position would be an honorable one, but it would not require the same order of ability as the other nor could one expect as high a remuneration.

You gentlemen know as well as I that a part of the present trouble in the wholesale grocery business lies in the differences which exist in the character of the businesses which you represent. The term "wholesale grocer" too frequently covers concerns whose operations are not those of a mere wholesaler in the good old sense of the term. This situation will work itself out in the course of time, but I sincerely believe that some attempt at classification and standardization of business organization, along the lines I have suggested will hasten the process and result in a benefit to the wholesale grocery trade.

If the foregoing suggestions could be carried out the tendency on the part of many manufacturers to do their own marketing would be greatly decreased. We should not forget, however, that in the case of some commodities direct selling may be economical and in such cases we may expect it to develop. On other occasions I have outlined the forces which make for economical combination marketing. I will not repeat them at this time. I merely say that in the case of the great majority of food products I do not believe that combination marketing is economical and that the chief purpose of the manufacturer in these cases is to secure larger profits by exercising greater control over the price of his products. The policy is generally based upon a heavy advertising expenditure, much of which serves no public interest. More than this the direct selling policy in such cases results in duplication of effort which is extremely wasteful. As I have elsewhere suggested it is like attempting to supply every household with water by piping it direct from the reservoir instead of through a system of mains and lateral pipes. Therefore, you may well feel economically justified in taking a stand against such direct selling. The wholesale grocer is a desirable agency in the distribution of food products. Direct selling tends to decrease his efficiency. Therefore, direct selling of food products is undesirable from the point of view of public policy.



# EDITORIAL

## Importance of the Biochemist in the Food Industry

RECENTLY two papers have appeared in "Chemical and Metallurgical Engineering" which are somewhat anomalous in two respects: they talk about foods and not metals, and they talk about biochemists and don't say so. We point out these facts, first, because those interested in foods should read these papers, and second, because the biochemist is a good person to know. The first article is by the present head of the Bureau of Chemistry. The other is by a cannery chemist.

These writers point out that the food industry is rapidly learning to utilize the services of chemists. The chemist made it possible for the beet to compete with the cane in furnishing us sugar; for the packer to save everything, even the squeal of the pig; for the miller always to make the same quality of flour. To state the whole thing in a sentence, there is hardly a problem in the food world but what can conceivably be solved by the chemist. Therefore give him a chance.

But what brand of chemist is most useful in this field of work? The biochemist, of course. Biochemistry deals with the materials and chemical reactions occurring in plants and animals. And since our food comes from plants and animals entirely, the connection between the biochemist and the food industry is obvious. He has had thorough training in the various fundamental branches of chemistry; he has had animal physiology so that he feels at home with animal tissue; he has had plant physiology so that he understands the ripening processes in fruits and seeds, the composition of juices, the preservation and destruction of flavors; he has had bacteriology, so that he knows the ways of yeasts and moulds, both good and bad. Therefore he is the compound specialist that is required in that complex and varied world known as the food industry.

There are roughly three phases of the chemist's activities in the food industry; analytical control, technical and engineering, investigation and research. The first two, being more obvious lines of usefulness, have received more attention than the last. And the third, moreover, has been conducted mostly in the university laboratories. Here it has progressed so rapidly that it has attracted and demanded the attention of the practical minds of the food world. The biochemist showed that all proteins do not have the same food value; that practically all fats are equally well digested; that there is a group of vitamins that cannot be ignored; that there are several very useful sugar products awaiting development; that the realm of colloid chemistry stands ready to be the useful tool of the men who work with churning, fruit jellies, gelatin, baking, salad dressing, dehydrating, starch, sugar clarification, and a host of other products and processes. And what is most important, the food folks are becoming very much awake to these facts. For some time we have been watching their fellowships at Mellon Institute; they have established the American Institute of Baking; several of them have organized research departments of their own; some of the California fruit associations have established fellowships at universities; and one of the yeast companies, and even a soft drink manufacturer, have done likewise. In other words, when they can't bring the biochemist to them, they go where he can be found.

Because of the interest in this subject, we will have more to say from time to time in these columns concerning the biochemist and his work.

## The Fight on Milk Compounds

THE strength of the dairy interests politically has enabled them to stir up the legislatures of several states on the subject of the sale of milk compounds, which are manufactured from skim milk, enriched with vegetable fats. During the recent legislative season the manufacturers of milk compounds had fights on their hands from one end of the country to the other, the number of bills of similar portent that were introduced clearly indicating the determined purpose of the milk producers to sweep these compounds from the market if possible to do so. In only one State, Wisconsin, did such a measure pass, but undoubtedly the dairy interests will repeat their efforts at the next legislative sessions. Legislation of a similar character is also before Congress, where because of its conflict with the Federal Pure Food and Drugs Act, an issue is involved that is of greater importance than any State legislation on the subject.

The Federal food act never contemplated setting up standards for foods beyond that of purity and honesty in labeling and manufacture. No laws were ever before contemplated to regulate the diet of the American people beyond providing them with wholesome foods. In the case of the milk compounds the issue of wholesomeness, adulteration or correct or incorrect labeling is not involved; the whole question is whether a manufacturer shall have the right to take skim milk, mix with it coconut fat, both wholesome and proper articles of diet, and offer the product for sale as a "milk compound." If there was a clear-cut case of deception of the public involved, the verdict would undoubtedly be against the milk compounds, but there has been no attempt on the part of the manufacturers of these compounds to palm them off as anything but what they are. They are not designed for infant feeding, and in fact the label on at least one of the best-known compounds bears a special warning against feeding to infants. Milk compounds are most successfully and most widely used as cooking ingredients; it is for this purpose that they are primarily made, and the opinion of many food experts is that, despite the absence of the vitamin A in coconut fat, the combination of skim milk and the fat is in every way a wholesome and nutritious product.

As stated by the National Wholesale Grocers' Association in a resolution adopted at its recent convention this sort of legislation is "a departure in Federal food legislation wholly at variance from the existing United States Food and Drugs Act, which already forbids all unwholesome and all improperly branded foods. The proposed amendment is most unfair to the manufacturer, the merchant and the millions of workingmen and other consumers who seek to economize through the use of wholesome and cheaper foods."

### Growing in Usefulness by Leaps and Bounds

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FRANK E. GREEN  
Manager, Gre-Nol Food Products Company  
Portland, Ore.



# FOOD NEWS FROM WASHINGTON



## Sweeping Indictment of Trade Commission

### Senator Fernold Makes Charges, Backed Up by Complaint of Helvetia Milk Condensing Company

Washington Bureau,  
The American Food Journal,  
622 Albee Building

**A** BROAD indictment of the Federal Trade Commission, charging that its activities had been diverted from constructive to destructive lines, was read into the Congressional Record by Senator Fernold of Maine, during the debate upon the packer bill. Looking to the commission for advice regarding combinations for foreign trade, business men found that it failed to act as an adviser and became a prosecutor of the business men, declared Senator Fernold during the debate. "They have placed hardships in their way and harassed and heckled them and made it so hard to do business that there is scarcely a business man in this country who favors any kind of Government regulation. The activities of the Federal Trade Commission and the expenses of that commission are what have brought this bill into contempt more than anything else."

The Senator read into the record a letter from W. T. Nardin, president of the Helvetia Milk Condensing Company, St. Louis, detailing some of the interferences which the Federal Trade Commission has offered to the evaporated milk industry. "It is difficult to discuss the functioning of the Federal Trade Commission without seeming to scold," wrote Mr. Nardin.

"I think the idea of the commission as it was originally conceived met generally with some approval on the part of business men. The whole situation under which business interests had to proceed at their peril with reference to anti-trust legislation was a difficult one. There was a very general idea that the Federal Trade Commission would give some assistance to people who wanted to keep within the law and yet carry on their business so as to best serve the public, which is, after all, the best measure of how business can best serve its own interests.

#### Won't Act in Advisory Capacity

"That hope doesn't seem to have been realized. The Federal Trade Commission, I understand, has steadfastly refused to allow itself to act in any advisory capacity. It has taken the position with regard to its activities that business men must proceed at their peril. It has aggravated rather than improved the situation, in that it has undertaken to exercise a more general regulation than any statutory provision prior to the creation of the Federal

Trade Commission contemplated. It has contended that under section 5 the Federal Trade Commission has the power to say that any activity by business concerns constitutes an unfair method of competition. This position has several times been denied by United States Circuit Courts of Appeal.

"It seems, however, rather slow to discard the exercise of such control. In 1918 the commission filed a complaint against Helvetia Milk Condensing Company, charging it with the practice of an unfair method of competition, because of the fact that it guaranteed its prices to its customers against its own subsequent price decline.

"In the evaporated milk business each packer of evaporated milk who has an established brand sold generally in the markets, announces from time to time its selling price. The Helvetia Company follows this practice. It publishes prices from time to time in the jobbing trade, and those prices are uniform within given territories to all jobbers in those territories. The effect of this guaranty is that on goods sold today at, let us say, \$5 per case, the jobber is protected on any stocks he may have on hand if the price of the Helvetia Company two weeks from today should be declined to \$4.50 per case. On such stock as the jobber had in his warehouse on the occasion of such a decline we would pay him a rebate of 50 cents per case.

"This practice had been under investigation by the Federal Trade Commission for more than two years prior to the time the complaint was filed against this company. The investigators for the commission had the matter in charge. The attorneys for the commission and the economists for the commission have admitted that they had no evidence that the Helvetia Company had used this practice in any way different from what it had been used by all other companies engaged in this line of business. It was a general practice followed by everybody packing canned milk. The practice had prevailed for more than 30 years."

#### Criticizes Method of Investigating

Mr. Nardin criticized the manner in which the commission conducted its investigations. A questionnaire sent out in 1916 regarding this practice brought many replies in favor of its suppression. The hearing on the milk complaint in 1919 was marked by the introduction of some of these letters, despite the fact that since 1916 many of the concerns then favoring elimination of price guarantees had changed their opinion. In at least one instance, the writer



of such a letter was subpoenaed to testify for the commission in the case against the Helvetia Company, but when he advised the commission that he had changed his opinion and now favored the practice he was sent back home.

So-called economists employed by the commission were also scored, the letter making special reference to a Dr. Kemper Simpson. Examination developed that this man was 26 years of age, had been out of college for not more than two years, had never been employed in the milk industry or, in fact, in any industry, and who proffered during the hearing many opinions on points regarding which he had no experience and which were controverted by direct testimony of a number of experienced business men.

The attitude of the commission, Mr. Nardin charged, is that they must maintain a complaint once it is filed. "It does not require legal training or experience to enable one to see how unfortunate the situation is when the body which is to sit in judgment becomes also the prosecutor in the case," he continued. "It is as if a prosecuting attorney was to pass finally on the innocence or guilt of the accused."

"The whole story may be summed up in this: The commission filed a complaint against us on what they called

an economic question. No lawyer for the commission, nor for any respondent, has ever contended that there was any legal point involved. We have been put to the time and expense of taking nearly 2,000 pages of testimony, and the end is not yet. No court would ever sustain a finding that unfair competition had been practiced by any of the concerns engaged in packing evaporated milk when all have followed exactly the same practice in exactly the same way. An investigating body approaching the problem in the spirit of fair investigation must long since have discovered that the whole subject was a matter outside of the commission's jurisdiction, but the employees of the commission and the commission itself, having filed a complaint, now seem to feel the necessity of finding that some wrong has been committed. It seems to me that any unbiased person, with any conception of the problems of business, must concede that it is intolerable to have business under the attempted supervision of a body which proceeds in the spirit of prosecution rather than in the spirit of investigation, which observes no legal rules or legal limitations, which recognizes none of the limitations of rules of evidence, and which once having filed a complaint feels that it must justify its former action by finding that wrong has been done."

## Few Food Products on Free List

### New Tariff Bill Fixes Duties on Nearly All Edible Imports

VERY few food products appear in the free list of the new tariff bill introduced in the House of Representatives on June 29 following six months' work by the Ways and Means Committee. Foods and food products are materially affected by the measure, not only as regards the dutiable features but also as influenced by the administrative provisions of the bill. The basing of duties on American valuations and the application of duties to goods in warehouses at the time of passage of the measure will materially affect the industry.

Section 318 of the special features provides that the new rates of duty applicable to imported merchandise are to be assessed against all warehoused goods on withdrawal, even though brought into the country prior to the passage of the law. The text of this provision is as follows:

Sec. 318—That on and after the day when this Act shall go into effect all goods, wares, and merchandise previously imported, for which no entry has been made, and all goods, wares, and merchandise previously entered without payment of duty and under bond for warehousing, transportation, or any other purpose, for which no permit of delivery to the importer or his agent has been issued, shall be subjected to the duties imposed by this Act and to no other duty upon the entry or the withdrawal thereof: Provided, That when duties are based upon the weight of merchandise deposited in any public or private bonded warehouse, said duties shall be levied and collected upon the weight of such merchandise at the time of its entry.

#### Drawback Provisions Continued

The drawback provisions of former tariff laws, returning to exporters all duties, less one per cent, paid on imported articles, raw materials, etc., which become component parts of goods, wares or merchandise exported, are continued in the new bill. It is provided "that upon the exportation of articles manufactured or produced in the United States in whole or in part from imported merchandise or materials upon which customs duties have been paid, the full amount of such duties paid upon the quantity of materials used in the manufacture or production of the exported product, less one per cent of such duties, shall be refunded as drawback."

Provisions for reciprocal agreements as to duty with countries giving special concessions to American products,

as well as for retaliatory action against countries discriminating against imports from the United States, are included in the new bill. The President is given authority to make commercial treaties with foreign countries reducing the duties on imports of goods from a nation, or placing them on the free list, provided similar action is accorded imports of American goods into the foreign country, with the consent of Congress.

The bill also empowers the President to impose a duty on the goods of any country equal to that levied by that nation on American exports and to suspend the provisions of the tariff bill for this purpose.

#### Assessments upon American Valuations

The assessment of all duties upon the American valuation of the goods imported is an important feature of the measure and is provided for under section 402, dealing with value, as follows:

Sec. 402—Value. Except as otherwise provided by law, the word "value" wherever used in this act or in any other law relating to the appraisement or the classification of imported merchandise shall mean the price on the date of exportation of the imported merchandise at which comparable and competitive products of the United States were ordinarily sold or freely offered for sale in the usual wholesale quantities and in the customary wrappings, coverings and containers, whether holding liquids or solids, to all purchasers in the ordinary course of trade, including all costs, charges and expenses in the principal market or markets of the United States; or, when such value can not be ascertained to the satisfaction of the appraising officer, shall mean the value of the imported merchandise on said date for sale (whether or not there shall be an actual sale), for consumption or use in the United States in its condition, including wrappings, coverings and containers, whether holding liquids or solids, as imported.

In determining the value for sale, appraising officers may take into consideration, among other matters, the selling price or cost of production of comparable products of the United States and of articles made therefrom or from like imported materials, not sold in usual wholesale quantities or not sold or freely offered for sale to all purchasers in the ordinary course of trade, or not sold at all, and the selling price in the United States of comparable imports, or the selling price or market value or cost of production of



the imported merchandise in the foreign country, and may exclude or include all or any costs, charges and expenses, including duties, and also profits and commission, if any, keeping always in mind the legislative intention that duties ad valorem shall be assessed upon the fair market value of the imported merchandise in the United States. No pretended sale or offer for sale, and no sale or offer for sale tending to establish a fictitious market, shall be held to establish value as herein defined; nor shall a value substantially raised or lowered at the time of exportation otherwise than in the ordinary course of trade be deemed to be such value.

Sec. 403—Purchased—Imported merchandise shall be deemed and held to have been "purchased" within the meaning of this Act when the price or amount to be paid or remitted therefor by a person in the United States to a person in a foreign country or to his agent or representative in the United States was fixed, agreed upon, or determined at the time of or prior to the exportation of the merchandise, whether the merchandise be shipped directly to the purchaser or to an agent of the seller or to the seller's branch house in the United States for delivery.

Sec. 404—Otherwise than by Purchase. Merchandise shall be deemed and held to have been imported otherwise than by purchase within the meaning of this act if, and when, the same is shipped from a foreign country to the United States without a price or consideration paid or to be paid or remitted by a person in the United States to a person in a foreign country or to his agent or representative in the United States having been fixed, agreed upon, or determined prior to such shipment.

A feature of the measure is the number of the schedules instead of lettering them as in the past. Food products are dealt with in Schedules 5 (sugar and molasses), 7 (agricultural products) and 8 (wines and liquors). In addition there are scattered in various other schedules sections affecting the industry, such as containers, metal bottle caps, etc.

Following are the provisions of the new bill dealing with food products:

Par. 38. Flavoring extracts and natural or synthetic fruit flavors, fruit esters, oils, and essences, all the foregoing not containing alcohol, and not specially provided for, 25 per centum ad valorem.

Par. 87. Vanilla beans, 30 cents per pound; tonka beans, 25 cents per pound.

Par. 387. Bottle caps of metal, collapsible tubes, and sprinkler tops, if not decorated, colored, waxed, lacquered, enameled, lithographed, electroplated, or embossed in color, 25 per centum ad valorem; if decorated colored, waxed, lacquered, enameled, lithographed, electroplated, or embossed in color, 40 per centum ad valorem.

Par. 409. Casks, barrels and hogsheads (empty), sugar-box shooks, and packing boxes (empty), and packing-box shooks, of wood, not specially provided for, 15 per centum ad valorem.

Par. 410. Boxes, barrels, and other articles containing oranges, lemons, limes, grape fruit, shaddocks or pomelos, 20 per centum ad valorem; Provided, That the thin wood, so called, comprising the sides, tops and bottoms of orange and lemon boxes of the growth and manufacture of the United States, exported as orange and lemon box shooks, may be reimported in completed form, filled with oranges and lemons, by the payment of duty at one-half the rate imposed on similar boxes of entirely foreign growth and manufacture; but proof of the identity of such shooks shall be made under regulations to be prescribed by the Secretary of the Treasury.

Par. 501. Sugars, tank bottoms, sirups of cane juice, melada, concentrated melada, concrete and concentrated molasses, testing by the polariscope not above seventy-five sugar degrees, and all mixtures containing sugar and water, testing by the polariscope above fifty sugar degrees and not above seventy-five sugar degrees, 1 16-100 cents per pound, and for each additional sugar degree shown by the polariscopic test, four one-hundredths of 1 cent per pound additional, and fractions of a degree in proportion.

Par. 502. Any person manufacturing or refining in the United States sugar, testing by the polariscope over ninety-nine degrees, produced from beet or cane grown in the continental United States, shall for each pound so manufactured or refined during any month in any State, Territory or the District of Columbia, be permitted to import, at any time before the expiration of nine months after the last

day of such month (for the sole purpose of being manufactured or refined by him in such State, Territory or District), two pounds of sugar testing by the polariscope not above ninety-six degrees, at three-fourths of the rate of duty to which such sugar would otherwise be subject. The Secretary of the Treasury shall make all regulations necessary for the enforcement of this paragraph, including the taking of bonds to secure compliance with its provisions.

Par. 503. Molasses and sirups testing not above 48 per centum total sugars, 1 cent per gallon; testing above 48 per centum total sugars, two hundred and seventy-five one-thousandths of 1 cent additional for each per centum of total sugars and fractions of a per centum in proportion.

Par. 504. Maple sugar and maple sirup, 4 cents per pound; dextrose testing not above 99.7 per centum and dextrose sirup, 1 1-2 cents per pound. Sugar cane in its natural state, or unmanufactured, \$1 per ton of two thousand pounds; sugar contained in dried sugar cane, or in sugar cane in any other than its natural state, 75 per centum of the rate of duty applicable to manufactured sugar of like polariscopic test.

Par. 505. Adonite, arabinose, dulcitol, galactose, inositol, inulin, levlulose, mannite, d-talose, d-tagatose, ribose, melibiose, dextrose testing above 99.7 per centum, mannose, melititol, raffinose, rhamnose, salicin, sorbitol, xylose, and other of the higher saccharides required for scientific purposes, 50 per centum ad valorem.

Par. 506. Sugar candy and all confectionery not specially provided for, and on sugar after being refined, when tinted, colored, or in any way adulterated, 30 per centum ad valorem. The weight and the value of the immediate coverings other than the outer packing case or other covering shall be included in the dutiable weight and the value of the merchandise.

Par. 705. Extract of meat, including fluid, 15 cents per pound.

Par. 706. Sausage casings, weasands, intestines, bladders, tendons and integuments, not specially provided for; meats, fresh, prepared, or preserved, not specially provided for, 15 per centum ad valorem: Provided, that no meats of any kind shall be imported into the United States unless the same is healthful, wholesome and fit for human food and contains no dye, chemical, preservative or ingredient which renders the same unhealthful, unwholesome, or unfit for human food, and unless the same also complies with the rules and regulations made by the Secretary of Agriculture, and that, after entry into the United States in compliance with said rules and regulations, said meats shall be deemed and treated as domestic meats within the meaning of and shall be subject to the provisions of the Act of June 30, 1906 (Thirty-fourth Statutes at Large, page 674), commonly called the "Meat Inspection Amendment," and the Act of June 30, 1906 (Thirty-fourth Statutes at Large, page 768), commonly called the "Food and Drugs Act," and that the Secretary of Agriculture be and hereby is authorized to make rules and regulations to carry out the purposes of this provision, and that in such rules and regulations the Secretary of Agriculture may prescribe the terms and conditions for the destruction of all such meats offered for entry and refused admission into the United States unless the same be exported by the consignee within the time fixed therefor in such rules and regulations.

Par. 707. Milk, fresh, 1 cent per gallon; sour milk and buttermilk, one-half of 1 cent per gallon; cream, having less than 30 per centum of butter fat, 5 cents per gallon; having 30 per centum or more of butter fat, 10 cents per gallon.

Par. 708. Milk, condensed or evaporated: In hermetically sealed containers, unsweetened, 1 cent per pound; sweetened, 1 1-2 cents per pound; all other, 1 3-8 cents per pound; whole milk powder, 3 cents per pound; cream powder, 8 cents per pound; and skimmed milk powder, 1 1-2 cents per pound; malted milk, and compounds of or substitutes for milk or cream, 20 per centum ad valorem.

Par. 709. Butter, 8 cents per pound; oleomargarine, 8 cents per pound.

Par. 710. Cheese, valued at less than 30 cents per pound; 25 per centum ad valorem; cheese substitutes, 5 cents per pound.

Par. 711. Birds, live; Poultry, 2 cents per pound; all other, valued at \$5 or less each, 50 cents each; valued at more than \$5 each, 20 per centum ad valorem.



Par. 712. Birds, dead, dressed or undressed: Poultry, 4 cents per pound; all other, 20 per centum ad valorem; all the foregoing, prepared or preserved in any manner and not specially provided for, 22 per centum ad valorem.

Par. 713. Eggs of poultry, in the shell, 6 cents per dozen; whole eggs, egg yolk, and egg albumen, frozen or otherwise prepared or preserved, and not specially provided for, 4 cents per pound; dried whole eggs, dried egg yolk, and dried egg albumen, 15 cents per pound.

Par. 717. Honey, 2 1-2 cents per pound.

Par. 718. All fish, fresh, frozen, or packed in ice, not specially provided for, 1 cent per pound.

Par. 719. Salmon, pickled, salted, smoked, kippered, or otherwise prepared or preserved, 25 per centum ad valorem; finnan haddie, 25 per centum ad valorem; fish, dried, salted or unsalted, 1 3-4 cents per pound; fish, skinned or boned, including herring skinned, in bulk, or in immediate containers weighing with their contents more than thirty pounds each, 2 1-2 cents per pound, including the weight of the immediate container with the contents.

Par. 720. Herring and mackerel, pickled or salted, whether or not boned, when in bulk, or in immediate containers weighing with their contents more than thirty pounds each, 1 1-2 cents per pound, including the weight of the immediate container and the brine, pickle, and salt.

Par. 721. Fish (except shellfish), by whatever name known, packed in oil or in oil and other substances, 26 per centum ad valorem; all other fish (except shellfish), pickled, salted, smoked, kippered, or otherwise prepared or preserved (except in oil or in oil and other substances), in immediate containers weighing with their contents not more than thirty pounds each, 20 per centum ad valorem; in bulk or in immediate containers weighing with their contents more than thirty pounds each, 1 1-4 cents per pound, including the weight of the immediate container with the contents.

Par. 722. Crab meat, packed in ice or frozen, or prepared or preserved in any manner, 26 per centum ad valorem; fish paste and fish sauce, 28 per centum ad valorem; caviar and other fish roe for food purposes, packed in ice or frozen, prepared or preserved, by the addition of salt in any amount, or by other means, 28 per centum ad valorem.

Par. 723. Barley, hulled or unhulled, 15 cents per bushel of forty-eight pounds; barley malt, 40 cents per one hundred pounds; pearl barley and barley flour, 2 cents per pound.

Par. 724. Buckwheat, hulled or unhulled, 30 cents per one hundred pounds; buckwheat flour and grits, or groats, one-half of 1 cent per pound.

Par. 725. Corn or maize, including cracked corn, 15 cents per bushel of fifty-six pounds; corn grits, meal and flour, and similar products, 30 cents per one hundred pounds.

Par. 726. Macaroni, vermicelli, noodles, and similar alimentary pastes, 1 1-2 cents per pound.

Par. 727. Oats, hulled or unhulled, 10 cents per bushel of thirty-two pounds; unhulled ground oats, 32 cents per one hundred pounds; oatmeal, rolled oats, oat grits, and similar oat products, 60 cents per one hundred pounds.

Par. 728. Paddy or rough rice, 1 cent per pound; brown rice (hulls removed), 1 1-4 cents per pound; milled rice (bran removed), 2 cents per pound; broken rice, and rice meal, flour, polish, and bran, one-half of 1 cent per pound.

Par. 729. Rye, 10 cents per bushel of fifty-six pounds; rye flour and meal, 30 cents per one hundred pounds.

Par. 730. Wheat, 25 cents per bushel of sixty pounds; wheat flour, semolina, crushed or cracked wheat, and similar wheat products not specially provided for, 50 cents per one hundred pounds.

Par. 733. Cereal breakfast foods, and similar cereal preparations, by whatever name known, processed further than milling, and not specially provided for, 17 per centum ad valorem.

Par. 734. Biscuits, wafers, cake, cakes, and similar baked articles, and puddings, all the foregoing by whatever name known, whether or not containing chocolate, nuts, fruits, or confectionery of any kind, 28 per centum ad valorem.

Par. 735. Apples, green or ripe, 25 cents per bushel of 50 pounds; dried, desiccated, or evaporated, 2 cents per pound; otherwise prepared or preserved, and not specially provided for, 2 1-2 cents per pound.

Par. 736. Bananas, 2 cents per bunch; dried, desiccated, or evaporated, and banana flour, 4 cents per one hundred pounds.

Par. 737. Berries, edible, in their natural condition or in brine, 1 cent per pound; dried, desiccated, or evap-

orated, 2 1-2 cents per pound; otherwise prepared or preserved, and not specially provided for, 20 per centum ad valorem.

Par. 738. Cherries, in their natural state or in brine, 1 1-2 cents per pound; maraschino cherries and cherries prepared or preserved in any manner, 20 per centum ad valorem.

Par. 739. Cider, 10 cents per gallon; vinegar, 6 cents per proof gallon: Provided, That the standard proof for vinegar shall be 4 per centum by weight of acetic acid.

Par. 740. Citrons and citron peel, crude, or in brine, 2 cents per pound; candied or otherwise prepared or preserved, 4 cents per pound; orange and lemon peel, crude, in brine, candied, or otherwise prepared or preserved, 2 cents per pound.

Par. 741. Figs, fresh or dried, 2 cents per pound; prepared or preserved in any manner, 20 per centum ad valorem; dates, 1 cent per pound.

Par. 742. Grapes in barrels or other packages, 25 cents per cubic foot of the capacity of the packages; raisins, 2 cents per pound; dried currants and other dried grapes, 2 1-2 cents per pound.

Par. 743. Lemons, 2 cents per pound; limes, oranges, and grapefruit, 1 cent per pound.

Par. 744. Olives in brine, green, 20 cents per gallon; ripe, 20 cents per gallon; pitted or stuffed, 30 cents per gallon; dried ripe olives, 4 cents per pound.

Par. 745. Peaches and pears, green or ripe, one-half of 1 cent per pound; dried, desiccated, or evaporated, 1 cent per pound; otherwise prepared or preserved, and not specially provided for, 20 per centum ad valorem.

Par. 746. Pineapples, three-fourths of 1 cent each; pineapples, prepared or preserved in any manner, 20 per centum ad valorem.

Par. 747. Plums, prunes, and prunelles, green or ripe, one-half of 1 cent per pound; dried, one-half of 1 cent per pound; otherwise prepared or preserved, and not specially provided for, 20 per centum ad valorem.

Par. 748. Pickled fruits and nuts, and sauces of all kinds, not specially provided for; comfits, sweetmeats, and all jellies, jams, marmalades, fruit butters, and similar products, 28 per centum ad valorem.

Par. 749. Fruits in their natural state, or in brine, dried, desiccated, evaporated, or otherwise prepared or preserved, and not specially provided for, or mixtures of two or more fruits, 20 per centum ad valorem: Provided, That all provisions of this title for fruits and berries prepared or preserved shall include fruits and berries preserved or packed in sugar, or having sugar added thereto, or preserved or packed in molasses, spirits, or their own juices.

Par. 750. Berries and fruits, of all kinds, and similar products, prepared or preserved in any manner, containing 5 per centum or more of alcohol shall pay in addition to the rates provided in this title \$5 per proof gallon on the alcohol contained therein: Provided, however, That nothing in this Act shall be construed as permitting the importation of intoxicating liquor in violation of the eighteenth amendment to the Constitution, or any Act of Congress enacted in its enforcement.

Par. 754. Almonds, not shelled, 4 cents per pound; shelled, 8 cents per pound.

Par. 755. Cream or Brazil nuts, 1 cent per pound; filberts, not shelled, 2 1-2 cents per pound; shelled, 5 cents per pound; chestnuts, including marrons, in their natural state, dried, or baked, one-half of 1 cent per pound; prepared or preserved, and not specially provided for, 1 cent per pound; pignolia nuts, 1 cent per pound; pistache nuts, 1 cent per pound.

Par. 756. Coconuts, one-half of 1 cent each; coconut meat, shredded and desiccated, or similarly prepared, 4 1-2 cents per pound.

Par. 757. Peanuts, not shelled, 3 cents per pound; shelled, 4 cents per pound.

Par. 758. Walnuts of all kinds, not shelled, 2 1-2 cents per pound; shelled, 5 cents per pound; pecans, unshelled, 1 cent per pound; shelled, 2 cents per pound.

Par. 759. Edible nuts, shelled or unshelled, not specially provided for, 1 cent per pound: Provided, That no allowance shall be made for dirt or other impurities in nuts of any kind, shelled or unshelled.

Par. 760. Oil-bearing seeds and materials: Castor beans, one-half of 1 cent per pound; flaxseed, 25 cents per bushel of fifty-six pounds; poppy seed, 32 cents per one hundred pounds; sunflower seed, 2 cents per pound; apricot and peach kernels, 3 cents per pound.

Par. 763. Beans, green or unripe, one-half of 1 cent per



pound; dried, 1 1-4 cents per pound; in brine, prepared or preserved in any manner, 2 cents per pound.

Par. 764. Sugar beets, 80 cents per ton; other beets, 17 per centum ad valorem.

Par. 765. Chickpeas or garbanzos, 1 cent per pound; cowpeas, one-half of 1 per cent per pound; lentils, 2 cents per pound; lupins, one-half of 1 cent per pound.

Par. 766. Mushrooms, fresh, or dried or otherwise prepared or preserved, 33 1-3 per centum ad valorem; truffles fresh, or dried or otherwise prepared or preserved, 25 per centum ad valorem.

Par. 767. Peas, green or dried, 75 cents per one hundred pounds; peas, split, 1 cent per pound; peas, prepared or preserved in any manner, 2 cents per pound.

Par. 768. Onions, 75 cents per one hundred pounds; garlic, 2 cents per pound.

Par. 769. White or Irish potatoes, 42 cents per one hundred pounds; dried, dehydrated, or desiccated potatoes, 3 1-2 cents per pound; potato flour, 1 1-2 cents per pound.

Par. 770. Tomatoes in their natural state, 1 cent per pound; tomato paste, 28 per centum ad valorem; all other, prepared or preserved in any manner, 16 per centum ad valorem.

Par. 771. Turnips, 12 cents per one hundred pounds.

Par. 772. Vegetables in their natural state, not otherwise provided for, 20 per centum ad valorem; **Provided**, That in the assessment of duties on vegetables no segregation or allowance of any kind shall be made for foreign matter or impurities mixed therewith.

Par. 773. Vegetables, if cut, sliced, or otherwise reduced in size, or if parched or roasted, or if pickled, or packed in salt, brine, oil, or prepared or preserved in any other way and not specially provided for; soya beans, prepared or preserved in any manner; bean stick, miso, bean cake, and similar products, not specially provided for; soups, pastes, balls, puddings, hash, and all similar forms, composed of vegetables, or of vegetables and meat or fish, or both, not specially provided for, 25 per centum ad valorem.

Par. 776. Chocolate and cocoa, sweetened or unsweetened, powdered, or otherwise prepared, 17 1-2 per centum ad valorem, but not less than 2 cents per pound; cacao butter, 3 1-2 cents per pound.

Par. 778. Hay, \$4 per ton; straw, \$1 per ton.

Par. 779. Hops, 24 cents per pound; hop extract, \$1.50 per pound; lupulin, 75 cents per pound.

Par. 780. Spices and spice seeds: Anise seeds, 2 cents per pound; caraway seeds, 1 cent per pound; cardamon seeds, 10 cents per pound; cassia, cassia buds, and cassia vera, unground, 2 cents per pound; ground, 5 cents per pound; cloves, unground, 3 cents per pound; ground, 6 cents per pound; clove stems, unground, 2 cents per pound; ground, 5 cents per pound; cinnamon and cinnamon chips, unground, 2 cents per pound; ground, 5 cents per pound; coriander seeds, one-half of 1 cent per pound; cummin seeds, 1 cent per pound; curry and curry powder, 2 cents per pound; fennel seeds, 1 cent per pound; ginger root, not preserved or candied, unground, 2 cents per pound; ground 5 cents per pound; mace, unground, 4 cents per pound; ground, 8 cents per pound; Bombay, or wild mace, unground, 18 cents per pound; ground, 22 cents per pound; mustard seeds (whole), 1 cent per pound; mustard, ground, prepared in bottles or otherwise, 5 cents per pound; nutmegs, unground, 2 cents per pound; ground, 5 cents per pound; pepper, capsicum or red pepper or cayenne pepper, and paprika, unground, 2 cents per pound; ground, 5 cents per pound; black or white pepper, unground, 2 cents per pound; ground, 5 cents per pound; pimento (allspice), unground, 1 cent per pound; ground, 3 cents per pound; whole pimentos, packed in brine or in oil, or prepared or preserved in any manner, 6 cents per pound; sage, unground, 1 cent per pound; ground, 3 cents per pound; turmeric, 10 cents per pound; mixed spices and spice seeds not specially provided for, including all herbs or herb leaves in glass or other small packages, for culinary use, 20 per centum ad valorem: **Provided**, That in all the foregoing no allowance shall be made for dirt or other foreign matter: **Provided further**, That the importation of pepper shells, ground or unground, is hereby prohibited.

Par. 781. Teasels, 25 per centum ad valorem.

#### Schedule 8—Spirits, Wines and Other Beverages

Par. 801. Liquors, as defined in the National Prohibition Act, when imported in compliance with the provisions of that Act, shall be dutiable at the rates hereinafter provided in this title.

Par. 802. Brandy and other spirits manufactured or distilled from grain or other materials, cordials, liquors, ar-

rack, absinthe, kirschwasser, ratafia, and bitters of all kinds containing spirits, and compounds and preparations of which distilled spirits are the component part of chief value and not specially provided for, \$5 per proof gallon.

Par. 803. Champagne and all other sparkling wines, \$6 per proof gallon.

Par. 804. Still wines, including ginger wine or ginger cordial, vermouth, and rice wine or sake, and similar beverages not specially provided for, \$1.25 per gallon: **Provided**, That any of the foregoing articles specified in this paragraph when imported containing more than 24 per centum of alcohol shall be classed as spirits and pay duty accordingly.

Par. 805. Ale, porter, stout, beer and fluid malt extract, \$1 per gallon; malt extract, solid or condensed, 60 per centum ad valorem.

Par. 806. Cherry juice, prune juice, or prune wine, and all other fruit juices and fruit sirups, not specially provided for, containing less than one-half of 1 per centum of alcohol, 70 cents per gallon; containing one-half of 1 per centum of alcohol, 70 cents per gallon; containing one-half of 1 per centum or more of alcohol, 70 cents per gallon and in addition thereto \$5 per proof gallon on the alcohol contained therein.

Par. 807. Ginger ale, ginger beer, lemonade, soda water, and similar beverages containing no alcohol, and beverages containing less than one-half of 1 per centum of alcohol, not specially provided for, 15 cents per gallon.

Par. 808. All mineral waters and all imitations of natural mineral waters, and all artificial mineral waters not specially provided for, 10 cents per gallon.

Par. 809. When any article provided for in this title is imported in bottles or jugs, duty shall be collected upon the bottles or jugs a one-third the rate provided on the bottles or jugs if imported empty or separately.

Par. 810. Each and every gauge or wine gallon of measurement shall be counted as at least one proof gallon; and the standard for determining the proof of brandy and other spirits or liquors of any kind when imported shall be the same as that which is defined in the laws relating to internal revenue. The Secretary of the Treasury, in his discretion, may authorize the ascertainment of the proof of wines, cordials, or other liquors and fruit juices by distillation or otherwise, in cases where it is impracticable to ascertain such proof by the means prescribed by existing law or regulations.

Par. 811. No lower rate or amount of duty shall be levied, collected, and paid on the articles enumerated in paragraph 802 of this title than that fixed by law for the description of first proof; but it shall be increased in proportion for any greater strength than the strength of first proof, and all imitations of brandy, spirits, or wines imported by any names whatever shall be subject to the highest rate of duty provided for the genuine articles respectively intended to be represented, and in no case less than \$5 per gallon: **Provided**, That any brandy or other spirituous or distilled liquors imported in any sized cask, bottle, jug, or other packages, of or from any country, dependency, or province under whose laws similar sized casks, bottles, jugs, or other packages of distilled spirits, wine, or other beverage put up or filled in the United States are denied entrance into such country, dependency, or province, shall be forfeited to the United States.

Par. 813. No wines, spirits, or other liquors or articles provided for in this title containing one-half of 1 per centum or more of alcohol shall be imported or permitted entry except on a permit issued therefor by the Commissioner of Internal Revenue, and any such wines, spirits, or other liquors or articles imported or brought into the United State without a permit shall be seized and forfeited in the same manner as for other violations of the customs laws.

#### Free List

Par. 1548. Cocoa, or cacao beans.

Par. 1549. Coffee.

Par. 1665. Tapioca, tapioca flour and cassava.

Par. 1667. Tea not specially provided for, and tea plants: **Provided**, That all cans, boxes, and other immediate containers, including paper, and other wrappings of tea in packages of less than five pounds each, and all intermediate containers of such tea, except mats, shall be dutiable at the rate chargeable thereon if imported empty: **Provided further**, That nothing herein contained shall be construed to repeal or impair the provisions of an Act entitled "An Act to prevent the importation of impure and unwholesome tea," approved March 2, 1897, and any Act amendatory thereof.



# Only 45 Creameries Make Butter for Margarin

THE names of only 45 creameries appear upon the list of establishments whose butter may be used in the manufacture of oleomargarine at plants under the inspection of the Bureau of Animal Industry of the Department of Agriculture.

Publication of the list, which is issued by the bureau once a year, recently caused considerable agitation in certain newspaper circles, one newspaper article characterizing it as a most terrible reflection upon the creamery butter industry, and stating that "out of tens of thousands of butter factories in the United States only forty-three are looked upon by the United States Government as fit to manufacture creamery butter good enough to be used in the manufacture of oleomargarine."

According to the Bureau of Animal Industry the facts are that out of tens of thousands of butter factories in the United States only 45 are producing butter for use in the manufacture of oleomargarine, and only 45 have made application to the Bureau of Animal Industry for the permit which must be secured before such butter can be produced.

The registration of creameries supplying butter to oleomargarine manufacturers has been in existence for several years. The first order dealing with the subject was issued in July, 1916, and required that all milk and cream used in the preparation of oleomargarine should be pasteurized and that butter used in its manufacture should be made only from pasteurized products after the end of the fiscal year. The following October an order was issued that the pasteurization of butter would become effective July 1, 1917, and in August, 1917, another order was issued setting forth the temperatures which the bureau would require for pasteurization.

It is a very simple matter for a modern creamery to secure a permit to sell butter to oleomargarine manufacturers. The bureau requires certain equipment for pasteurization and sets forth certain sanitary standards. An affidavit is required that all requirements are complied with,

and an inspector is sent to the plant to see if this is so. If everything is all right a permit is issued. New affidavits and inspections are required each year and, in addition, inspections are made at unexpected times.

Only ten creameries were removed from the list during the fiscal year ended June 30, last. Removals were made for various causes—such as neglecting to replace a broken recording thermometer, failing to pasteurize all milk and cream, etc. Sometimes the removal was made for a technical reason, as in the case of one creamery which, although failing to replace a broken recording thermometer, was properly pasteurizing its products. In other cases, financial difficulties were the cause of laxity, resulting in the revocation of a permit.

The small list of licensed creameries means nothing so far as conditions in the industry are concerned, declared Robert H. Kerr, who has charge of the meat inspection laboratories, in an interview with the representative of The American Food Journal. While there is a percentage of creameries in which the sanitary conditions are not of the best, the greatest majority would have no difficulty in securing a permit if they desired one. But there is no object in securing a permit unless butter is being produced for use in oleomargarine. And many of the plants producing such butter are operated by the oleomargarine manufacturers themselves, Swift & Company, for instance, holding permits for eighteen creameries, while the Bridgeman-Russell Company have four, the Beatrice Creamery Company three, and the Western Meat Company have two. Four concerns, therefore, hold 27 of the 45 permits issued this year.

There are two broad classes of oleomargarine, one made entirely of vegetable oils and fats, the other containing animal fats. Both require the use of some 15 per cent of real butter. While oleomargarine having animal fats is strictly supervised in manufacture, the vegetable fat margarine, made from cocoanut fats, for instance, comes under the pure food law and while the product must comply with that law there is no inspection of plants.

## Bill to Regulate Canned Milk Industries

REGULATION of the canned milk industry and taxes upon manufacturers and dealers in evaporated milks are sought by Representative Beck, of Wisconsin, in a bill which he has introduced in the House and which is now before the Ways and Means Committee.

The bill defines condensed, evaporated or concentrated milk to be the product resulting from the evaporation of a considerable portion of water from whole, fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows properly fed and kept, and contains, all tolerances being allowed for, not less than 26.15 per cent of total solids and not less than eight per cent of milk fat. Such milks, sweetened, shall be as above to which sugar (sucrose) has been added and shall contain, all tolerances being allowed for, not less than 28 per cent of total milk solids and eight per cent of milk fat. "Filled" milks are defined as those from which the milk fat has been removed and for which other fat has been substituted.

Section 2 of the measure provides that manufacturers of evaporated filled milk shall pay \$1,500 for each factory per annum, and every person, firm or corporation who manufactures evaporated filled milk or sweetened evaporated filled milk for sale shall be deemed a manufacturer. Wholesale dealers in evaporated milks shall pay \$750 per annum, but any manufacturer who sells only milks of his

own production in the original package shall not be deemed a wholesaler on account of such sales.

Retail dealers in evaporated milks shall pay \$12 per annum. All these taxes are to be due on July 1. Manufacturers who fail to pay the special tax shall, besides being liable to payment of the tax, be fined not less than \$1,200 nor more than \$5,000; wholesalers failing to pay the tax shall be liable to a fine of from \$500 to \$5,000, and retailers to a fine of from \$100 to \$500. Manufacturers would be required to file such notices, inventories and bonds, keep such books and render such returns of materials and products, put up such signs and affix such number to his factor as the Commissioner of Internal Revenue may require. The penalty of the bond is to be not less than \$10,000, and may be as much more as the commissioner may deem necessary. The measure also provides the manner in which evaporated milk shall be packed and the packages marked.

In addition to the special taxes Mr. Beck would levy a tax of 3 1-2 cents per pound upon all evaporated milk manufactured, to be paid by the manufacturer. Imported evaporated milk would be assessed, in addition to any import duty imposed, an internal revenue tax of 15 cents per pound.

The bill, in enacted into law, would become effective 90 days after its passage, and all evaporated milk then in stock would be deemed taxable.



# Margarin Manufacturers Plan Publicity

## Need for Educational Campaign to Remove Ignorance and Prejudice from Public Mind, Emphasized at Convention

**C**HARGES that 95 per cent of the butter sold in the United States is made from rancid cream neutralized with lime water were made at the meeting of the Institute of Independent Margarin Manufacturers at Atlantic City June 30 and July 31 by E. P. Kelly of Columbus, Ohio, newly elected president of the institute.

J. S. Abbott, secretary of the institute, charged that the margarin industry is menaced by "insidious propaganda," which he said was due to "selfish agricultural class interest." Mr. Abbott declared that many untruths are being circulated about margarin and advocated the bringing of libel suits against publications which falsely attack the product.

There was discussion of the need of an educational advertising campaign to remove from the public mind the ignorance and prejudice which exist regarding margarin. No definite plan was outlined.

### Prejudices against Margarin

E. S. Mapp of William J. Moxley, Inc., Chicago, read a paper on "Prejudices Existing in the Minds of the Public against Margarin." He referred to numerous conversations with consumers in his thirty years of experience in the margarin business to show that the minds of many had been poisoned with continuous falsehoods about margarin in the form of "the most insidious propaganda ever conceived by the mind of man." Some of those who do not know what margarin is are ashamed to let their neighbors know they use it, he said. Those who do know what it is use it openly and as a matter of preference and safety. In this connection Mr. Mapp quoted the remarks of the late Justice Field of the U. S. Supreme Court in rendering an opinion on the margarin laws of Pennsylvania as follows:

"Upon first impression one would suppose that it would be a matter of congratulation on the part of the State that in the progress of science a means had been discovered by which a new article of food could be produced, equally healthy and nutritious and less expensive than one already existing and for which it could be used as a substitute. Thanks and rewards would seem to be the natural return for such a discovery and the increase of the article thereby encouraged. But not so thought the Legislature of Pennsylvania. I have always supposed that the gift of life was accompanied with the right to seek and produce food by which life can be preserved and enjoyed in all ways not encroaching upon the equal rights of others. The right to procure healthy and nutritious food, by which life may be preserved and enjoyed, and to manufacture it is among these inalienable rights which, in my judgment, no State can give, and no State can take away except in punishment for crime. It is involved in the right to pursue one's happiness."

H. P. Trevithick, chief chemist, New York Produce Exchange, read a paper on "Chemistry and its Relation to Margarin Manufacture." He gave a resume of the development of the edible oils and margarin industries and the part played in the same by the science of chemistry. He outlined the fine points of the fundamental principles of the science of refining of edible oils and emphasized the importance of purchasing oils on sample, the sample being deposited with a commercial oil chemist to check deliveries.

James A. Flagg of the Sweet-Nut Butter Company, Jamaica Plains, Mass., delivered an address on "A Vital Need of the Margarin Industry." His address related chiefly to the attitude of the public toward margarin and what the industry should do to bring the public to a correct under-

standing of what margarin is—its composition, food value and method of manufacture.

A. W. Krebs of the E. A. Stevenson & Company, Inc., New York, spoke on the origin and production of cocoanut oil. He emphasized the danger of oil refining in an effort to get a snow white and perfectly neutral product. These properties are sometimes secured at the sacrifice of quality and should not be the basis of the acceptance of this oil for margarin manufacture.

### Co-operative Advertising

R. W. Levenhagen of the Glidden Nut Butter Company, Chicago, read a paper on "Co-operative Advertising" in which he discussed the basic principles of all successful co-operative commodity advertising. He said: "Margarin has quality and its sale can be constantly increased by telling the public all about it, its composition, food value and supervision and control by the Bureau of Animal Industry of the United States Department of Agriculture which insures it to be a product of unquestioned purity and wholesomeness. Precedent gives us some splendid examples of what has been accomplished in other products that were at first regarded as substitutes, but through the intelligent handling of advertising and sales campaigns along educational lines, built up a reputation for themselves that leaves no question regarding their legitimate right to command a constant and ever increasing trade."

W. L. Ephlin of the Ed. S. Vail Butterine Company, Chicago, made a strong plea for reform in salesmanship methods, condemning the practice of consigning margarin to dealers to be sold or returned to the manufacturer as it suits his convenience.

W. C. Kirk, assistant counsel of Armour & Company, Chicago, read a paper on "Laws Affecting Margarin." Pennsylvania and New York were the first states to enact oleomargarine laws, both of which were regulatory measures. Apparently these States regarded regulatory measures as insufficient because in 1885 both States enacted laws absolutely prohibiting the manufacture and sale of oleomargarine. In due course cases were brought under such statutes and the Supreme Court of Pennsylvania upheld the statutes while the Court of Appeals of New York held such laws unconstitutional. The Supreme Court of the United States was some ten years later again called upon to review an oleomargarine case in Pennsylvania in which an interstate question was raised. By this time the wholesomeness of margarin had been conceded and the Supreme Court's decision was to the effect that a State could not interfere with interstate commerce by prohibiting the importation and first sale of a wholesome article of food.

Mr. Kirk said further:

### Keep Industry Free from Criticism

"If any moral can be drawn from a sketch of the oleomargarine laws and cases arising thereunder, it would seem that the industry should be kept as free from criticism on the ground of fraud as possible. The early cases refer to the product as 'oleomargarine,' 'butterine,' etc., and it is apparent, from a review of them, that there was a basis for claims of fraud in years gone by. It does not take very much to enable the opponents of oleomargarine to make such charges, and I recommend that the name 'oleomargarine' or 'margarin' be used exclusively as a designation of the product instead of the word 'butterine,' or any name with butter as a part of it. Likewise, I think that the advertising given oleomargarine should go to the merits of the product itself rather than to allege that it is a substitute



for butter or even to make a comparison with butter. Oleomargarine, as a product of merit has stood the test of much hostile legislation, and it seems to me that it would be better to treat it as a definite product rather than a substitute for any other article. I believe if the laws and court decisions in the past are any guide, that you, as manufacturers and sellers of oleomargarine, can escape much criticism and probably hostile legislation by keeping oleomargarine dissociated with butter as much as possible.

"For the past decade or more the color element has been the chief basis of attack. In other words, the dairymen say that a yellow color is the badge of creamery butter, and that no product should be allowed to parade under the banner of another, so that deception might be possible.

"The so-called nut margarines, which are paper white in color, are increasing in popularity, and the opponents of such products are compelled to go beyond the color field to look for grounds of attack. A question of nutrition has been raised and the elusive vitamine is being widely discussed these days. It is claimed that butter is rich in such growing products, while oleomargarine contains few, if any, of them.

"No doubt many of the most popular foods contain few vitamins, so it is hard to perceive how the issue could ever be made the ground for prohibitory legislation, or have any effect on the final bulwarks of the honest manufacturers and distributors of food products—the courts.

"I believe in advertising your product you should be careful not to make its value appear dependent in any manner upon butter—simply treat it as an ideal spread for bread.

"Legislation different from anything yet enacted may be devised, but from the foregoing sketch of the decisions, it is apparent that unless fraud or deception can be shown or logically inferred there is little ground for fear."

#### Address by E. S. La Bart

Edward S. La Bart, advertising manager of Wilson & Company, who talked on "The Outlook and Means of Increasing Oleomargarine Business" stated that in spite of splendid selling organizations, well throughout merchandising plans and the excellent products which have been offered to the American public, it must still be conceded that there is great room for improvement among all of those factors which have for their object the increased manufacture and sale of oleomargarine.

He brought out that there had been no cooperation in the industry, each individual pulling against the other, with the industry standing by merely watching but not assisting. He deplored the lack of a common ground for working out important problems, and suggested the benefits to be derived from an association in which all members and all elements would contrive to bend their efforts towards selling their own product by boosting its qualities and values rather than selling it by comparison with other products.

Mr. La Bart indicated how the association of margarin manufacturers would be in a position to help individuals and each other as well, and that a bigger and broader vision of business meant looking upon the other fellow as a part of a whole, whose success or failure meant a lot to the industry.

In speaking of the future of the business Mr. La Bart said that it remained entirely in the hands of the association, and that the industry could become as large and as prosperous as those who guided its destiny wished to make it.

"We must throw ourselves into all of our work with a great expenditure of time and enthusiasm," he concluded, "and strip all of our motives and ideas of selfishness and supplant service and better ideals for such things that in the past worked against the best interests of all of us."

#### Those in Attendance

The following were in attendance at the convention:

J. S. Abbott, Institute of Independent Margarin Manufacturers, Washington, D. C.

A. E. Eckerson, Holland Butterine Company, Jersey City, N. J.

F. H. Lewis, India Refining Co., Philadelphia.

A. F. W. St John, Worcester Salt Co, Columbus, Ohio.

Arthur D. Holmes, E. I. DuPont de Nemours Co., Woods, town, N. Y.

R. R. Wason, Proctor & Gamble Company, Cincinnati, O.

R. M. Hale, Blanton Company, Philadelphia.

O. S. Martin, John F. Jelke Company, New York City.

T. H. Eckerson, Holland Butterine Co., Jersey City, N. J.

A. P. Lee, India Refining Company, Philadelphia.

James A. Flagg, Sweet Nut Butter Company, Boston.

W. C. Potter, Swift & Company, Chicago.

N. A. Dubois, Sweet Nut Butter Company, Jamaica Plain, Mass.

H. H. Sims, Blanton Company, St. Louis.

H. R. Hamilton, Glidden Nut Butter Company, Chicago.

M. J. Browne, Proctor & Gamble Distributing Company, Cincinnati.

R. W. Levenhagen, Glidden Company, Cleveland.

William G. Mintzer, Philadelphia.

T. Willard Ready, Niles, Mich.

E. A. Stevenson, E. A. Stevenson & Company, Inc., New York City.

Charles Doering, Jr., C. Doering & Co., Inc., Chicago.

W. L. Ephlin, Ed. S. Vail Butterine Company, Chicago.

N. F. O'Dea, Baltimore Butterine Company, Baltimore, Md.

A. W. Madsen, National Carton Company, Joliet, Ill.

W. E. Eberst, Capital City Products Company, Columbus, Ohio.

Adolf W. Krebs, E. A. Stevenson & Company, Boonton, N. J.

Earl Ryan, Earl Ryan Company, New York City.

Henry H. Kamsler, Armour & Company, Chicago.

J. T. Emery, The American Food Journal, New York City.

H. M. Brooks, William J. Moxley, Inc., Pittsburgh.

John L. Puterbaugh, Trinity Cotton Oil Co., Dallas, Tex.

Wm. J. Witler, Missouri Butterine Co., St. Louis.

Walter C. Kirk, Armour & Company, Chicago.

David A. Blanton, Blanton Company, St. Louis, Mo.

J. B. McLaughlin, Capital City Products Company, Columbus, Ohio.

C. L. Bruerd, Capital City Products Company, Columbus, Ohio.

Edmund F. Smith, Seydel Mfg. Co., Jersey City, N. J.

A. Giessing, Palmine Company, Inc., New York City.

J. M. Wadd, Wilson & Company, Chicago.

Howard J. Rohan, Churngold Corporation, Cincinnati.

E. S. Mapp, William J. Moxley, Inc., Chicago.

F. A. Hanley, William J. Moxley, Inc., Pittsburgh.

C. H. Redeker, Crown Margarin Co., St. Louis.

R. S. Masters, William J. Moxley, Inc., Philadelphia.

W. E. Miller, Jr., E. A. Stevenson & Co., Inc., N. Y. City.

George T. Moxley, William J. Moxley, Inc., Chicago.

B. S. Pearsall, B. S. Pearsall Butter Company, Elkin, Ill.

B. A. Massee, Troco Nut Butter Co, Chicago.

E. P. Kelly, Capital City Products Company, Columbus, Ohio.

W. D. Richardson, Swift & Company, Chicago.

H. P. Trevithick, New York Produce Exchange, New York City.

Edward S. La Bart, Wilson & Company, Chicago.

W. E. Utley, Capitol City Products Company, Columbus, Ohio.

C. A. Baumann, Wonder-Nut Products Company, Jefferson, Wis.

Howard Beatty, Glidden Nut Butter Company, Chicago.

Thomas J. Dee, Friedman Mfg. Company, Chicago.

Eycleshymer, Niles Capsule Company, Niles, Mich.

J. P. Gordon, Capital City Products Company, Chicago.



# The Vitamine Doctrine and the Oleomargarine Industry

## Claims of Dairy Industry that "Quart of Milk a Day" is Required in Human Diet is Disputed

By WILLIAM D. RICHARDSON

Chief Chemist, Swift & Company, Chicago

IT is interesting that among the scientific achievements of recent years three appear to have captured the public interest. The first is radium and radio-activity, the second Einstein's theory of relativity, and the third the doctrine of vitamins. I consider it fortunate that my task is to expound the simplest of the three and to have for an audience men engaged in the manufacture of a food product which has been prominently mentioned in connection with numerous discussions of the accessory food factors and hence who take a lively interest in the subject.

Contrary to the usual custom in developing an exposition or argument, I intend to state my general conclusion at the outset and afterward to give my reasons during the course of the address. Briefly that conclusion is, that given an ordinary, every-day, reasonably well balanced diet for the average man, woman or child, it does not make any difference from the dietary standpoint whether the individual eats oleomargarine or butter, and the one which he chooses is entirely a matter of taste, preference or economy. With such a diet he may choose to eat one or the other or neither without any appreciable influence on his growth, health or strength or his physical or mental energy. His diet usually is and should be so balanced and varied that he is not dependent on the small quantity of fat which is spread on bread to make it palatable, for his fat soluble A vitamine supply.

### Oleomargarine Used Since 1869

Oleomargarine has been an established article in the diet of the people of Europe and America since the researches of Hippolyte Mege in 1869 at the Royal Farm at Vincennes, France, developed the methods of manufacture for which he received the prize offered by Napoleon Third for the best substitute for butter. His problem was, first, to produce a product which would be cheaper than butter, because the consumption of the latter had overreached the production, and second, one with better keeping qualities and less liability to rancidity than butter. Both of these objects he achieved and in doing so laid the foundations of an industry which has continued in the same general direction with relatively minor changes in manufacturing details from that time to the present. The principal departure from the methods of Mege during recent years has been in the way of using relatively more vegetable fats and oils and relatively less those of animal origin. The increase in the consumption of the class of margarines known as nut butters during recent years has been phenomenal. This change has been occasioned largely if not solely by the relative abundance of the supply of raw material. The production of animal fats has not kept pace with the increase of population, while the supply of vegetable fats and oils of temperate and especially tropical origin can apparently be increased almost indefinitely.

While oleomargarine in its genesis and early history was to be considered a substitute for butter, it may now be looked upon as an established separate product, functioning as a spread for bread following a rather early custom developed in northwestern European countries. Indeed, in

a few places at the present time butter may be considered as a substitute for oleomargarine since the consumption of the former is much larger than that of the latter, according to statistics. It should be remembered that butter as a spread for bread is used in a comparatively small area of the earth, chiefly in North Europe and America and that in many other parts of the globe it is not used at all. In some places olive oil is the chief fatty product used both for cooking and as such for ordinary consumption; in others tallow drippings; and in the greater part of the world's area, namely, the great rice producing sections, which cereal furnishes the principal grain for more than half the population of the earth, various fats and oils are used in admixture. The use of butter may be looked upon as a local custom although we who have grown up with the custom are apt to consider it a universal and necessary one. However, the use of the product is a custom with us and the majority in North Europe and America has cultivated a taste for a fat with the so-called lactic flavor instead of for olive oil or tallow drippings or cocoanut oil without the lactic flavor. Hence it is quite natural and desirable that the lactic flavor should be given to the fat designed for table use.

### Palatability of the Diet

The importance of palatability as an aid in nutrition considered in a broad sense can scarcely be over-rated or over-stated. The significance of flavors and odors in connection with diet is a field that has scarcely been looked upon as suitable for scientific cultivation up to the present time, but it is one which properly husbanded by scientific men of broad training will yield abundant fruits in connection with dietetics. Flavors and odors (in addition to appearance and texture) are the guides which instinct follows in the selection of foods, and when the human taste shows a marked preference for a certain type of flavor as for the lactic flavor in this instance, the fact must be given great weight and consideration in the preparation of foods. It is scarcely necessary for a scientist to remind a group of oleomargarine manufacturers of the importance of palatability and texture in the preparation of their food product.

Let us now proceed to the vitamins in order to have before us an identical starting point and uniform point of view with reference to these much talked about and little known substances. Vitamins, known only by their effects when fed to animals including man, are those substances which are necessary as food accessories, although in very minute quantity, in order to maintain the normal status of the body. In their absence certain specific diseases may result or the normal rate of growth and general health will not be maintained. The three which are generally acknowledged to exist and whose effects in nutrition have been most studied are designated by the first three letters of the alphabet A, the growth promoting vitamine, B, the anti-neurotic vitamine in whose absence the disease beriberi results in man and polyneuritis in pigeons, and C, the anti-scorbutic vitamine, in the absence of which the well-known disease scurvy supervenes.

It should be emphasized that all of these vitamins so

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far as known at present are of vegetable origin, that is, they are produced by and in the higher plants and it is not known that any organs or cells of the higher animals are capable of producing them. They are also found in the lower unicellular plants such as yeast, but whether produced by the lower plants or not is still a moot question.

Therefore, it seems certain that the warm blooded animals, at any rate, and also birds, secure their supply of vitamins directly or indirectly from the vegetable kingdom. I use the word indirectly because the carnivorous groups of animals and birds must obtain their supply from other animals which have stored up vitamins from the vegetable kingdom in the first instance. This fact is important and should be emphasized, that the great storehouse of the vitamins is primarily in green plants, vegetables, cereals and fruits and secondarily in animal products. I say this should be emphasized because certain protagonists of the dairy industry would have us believe by their misleading and even untrue statements that the principal if not the only source of these substances lies in mammalian milk and principally in cow's milk, and that the human race cannot maintain itself in a sound condition of health and strength unless every man, woman and child consumes at least a quart of milk a day. Such statements are as false as they are absurd.

#### The Vitamins

The general history and development of knowledge in regard to vitamins you are probably familiar with and I will but briefly review the leading facts before discussing the individual ones, A, B and C.

The necessary food substances now generally known as vitamins eluded detection for many years owing to the fact that they are contained in practically all natural food stuffs although in varying concentration, and practically all the rations used in feeding experiments contain enough vitamins for normal growth and health. Although the deficiency disease scurvy has long been known, the striking clue afforded by this malady was not followed to a final conclusion until another deficiency disease, beri-beri, had been studied. It was very generally assumed that only five classes of food substances were necessary for normal growth and health, namely, proteins, fats, carbohydrates, mineral salts and water, when, however, these food substances were highly purified by chemical means, it was discovered by different investigators as far back as even as 1881 that they would not support growth. When to a diet of such purified food substances, however, small quantities of natural foods containing vitamins are added, the usual normal health and growth of the animal is maintained or restored. On such basic dietary experiments is our recent knowledge of the vitamins founded.

A or fat soluble A is found prominently in the green leaves of plants such as spinach, lettuce, alfalfa, clover, timothy, etc., in tomatoes, egg yolk, butter fat, palm oil, beef fat (especially oleo oil), codliver oil, whale oil, pig's liver oil, in liver and kidney tissue and glandular organs in general. While quantitative measurements of the relative amount of vitamins in various food materials are difficult, the above list is arranged in somewhat quantitative order. The solids of spinach and tomato contain more fat soluble A than does butterfat. Butterfat itself varies considerably in the amount of A with the season and the kind of feed. Green pasture feed produces more than other feeds. Butterfat usually contains more than codliver oil or whale oil. Daniels and Loughlin found that lard and cottonseed oil contained about one-fifth or one-sixth as much A as did butterfat and Drummond reports that palm oil contains one-third as much as butterfat while maize oil and cottonseed oil contain smaller quantities. A considerable further list of food products also contain A, carrots, sweet potatoes and yellow corn all contain sufficient amounts for satisfactory growth. Thus it is seen that a very considerable list of foods contain this vitamin so that any person using an ordinary, well-balanced diet will secure more than enough for satisfactory growth and health. In the absence of A, a condition which should not obtain in the American diet, a specific disease of the

eye known as xerophthalmia results but this malady has not been observed in America to the writer's knowledge while it has occurred in Europe during the late war and afterward. If A is denied the growing child or the young of animals, normal growth fails to take place, and in the adult while normal health may be maintained for a long time due perhaps to reserve supplies of A stored in the tissues, decline and failure are certain to occur later on.

#### Where Vitamine B Is Found

B or water soluble B. This vitamin, the first whose function was discovered and with whose discovery the names of Eijkman, Fraser and Stanton, and Casimir Funk are linked, is even more widely distributed than A. Its principal sources are in plant foods, the seeds of cereals, peas, beans and other legumes, spinach, cabbage, potatoes and carrots, the edible portion of onion, turnip, beet and tomato, the green parts of plants, alfalfa, clover, timothy, lettuce, the various fruits such as orange, lemon and grapefruit; apples and pears contain a lesser quantity than these; nuts contain a considerable quantity; milk contains moderate amounts and of the animal tissues, heart, kidney, brain, liver and other glandular organs are good sources of supply. Quantitatively yeast is by far the richest source of the water soluble B vitamin known, containing approximately four times as much as dried spinach and eight times as much as whole wheat, soya beans, dried eggs or milk solids. Thus you will see that without any recourse to milk or dairy products whatsoever, the average man, woman or child would find an abundant supply of this vitamin in other kinds of food ordinarily consumed in a diet which is at all varied or balanced. In the absence of a sufficient supply of the B vitamin, a specific disease known as beri-beri results which is analogous to the polyneuritis developed in pigeons when fed on a diet of polished rice as in the classical experiments of Eijkman and Funk. Other disorders have also been noticed, particularly disturbances of the digestive processes and losses in weight of the glandular and sexual organs. Resistance against infection is lowered. A constant supply of B is required by young and old, and there appears to be little reserve supply stored in the tissues of experimental animals.

C or water soluble C. This is the anti-scorbutic vitamin in whose absence the disease known as scurvy results. It is present in largest amount in fresh fruits, to a less extent in raw vegetables and tubers, in moderate or small quantities in meat and milk, but has not yet been detected in fats, cereal grains or legumes. Among the fruits, orange and lemon juice are better than lime juice. Among the vegetables, various turnips, beet root, carrots, rhubarb and tomatoes are good sources. Potatoes which have not been cooked too long contain moderate quantities. Meat products are commonly stated to contain little or no anti-scorbutic vitamins but Stefanson, the famous arctic explorer, and his party lived for a long time exclusively on seal and polar bear meat including liver and glandular organs and experienced no scurvy whatsoever, whereas another group consisting of three men belonging to his general expedition were attacked by scurvy on a diet of cached foods which they had found (flour, salt pork, butter, honey, sugar, pilot bread, preserved fruit, pemmican, meat extract, dried fruit, rice, beans and peas) but were promptly cured when fed meat partly raw. In spite of the laboratory experiments therefore, the proof seems certain that meat and especially raw meat contains the anti-scorbutic vitamin in sufficient quantity.

#### Effect of Heat on Vitamins

There is another point of great interest in connection with vitamins, important in connection with the preparation of foods by cooking and processing, namely, their stability under the influence of heat. Experiments thus far made seem to demonstrate that of the three, A is the most stable and C is the least stable, with B occupying an intermediate position. Therefore, it is very likely that will be found that sufficient quantities of A can be obtained from cooked foods but that fruits should be eaten so far as possible in raw condition as a source of C and that of the



vegetables some should be consumed cooked and some raw in the form of salads for B. This is precisely in accord with the long experience of mankind since the custom of eating raw fruits has been established from time immemorial as has the practice of cooking vegetables and eating raw salads, while meats and meat products are almost invariably consumed in the cooked condition. If, however, meat were the only source of food it would be necessary to follow the practice of Stefansson and the Eskimo, and consume part, at any rate, of it in the raw condition.

When the first announcements were made of the hypothesis that the growth of children and of animals in general depended upon the presence of a substance which was designated as fat soluble A, which was stated to be present in butter-fat more than in other foods, and these announcements were seized upon by certain extremists, some of them disinterested but more of them interested in a commercial way in exploiting the discovery, to state that the human race was dependent upon dairy products for its continued healthy existence, it might have been foreseen that any such narrow deduction from the premises would not stand the test of time. As a matter of fact many chemists and others, including the writer of this paper, predicted that fat soluble A would be found in a great variety of other foods in sufficient quantity for animal and human needs. This was a foregone conclusion from well-known facts of natural history. Those facts are in brief that milk is supplied by nature only for the nourishment of the young of mammals and the supply is cut off automatically after a time which varies for different species from about one month to about a year. Thereafter none of the species in a state of nature is furnished with milk and milk therefore cannot be considered in any sense a natural food for adults. The mammalian infant may be considered in a scientific sense as a parasite on its mother, but in the wisdom of nature this parasitic habit is discontinued at a comparatively early period in the life history of every species. Whether the species is carnivorous or herbivorous, whether its diet consists exclusively of meat or of plant products, or of parts of animals or of special parts of plants such as seeds or fruits, the transition from the suckling stage to the adult diet is a very rapid one considering the apparent and superficial differences, at any rate, between the two classes of foods. The young rabbit proceeds within a very few days from a diet of milk to a diet of leaves, the young lion from milk to meat, the fruit eating bats from milk to fruit, the blood sucking bat from milk to blood, and all of these varied diets and any others in the case of different species afford immediate satisfactory nourishment for the species considered. In the light of these facts it must appear to anyone that the natural adult diets of all species of animals, including man, must contain essentially the same food substances which are present in milk, including, of course, the recently discovered vitamins which, however, have not been isolated and whose chemical constitution is unknown, and perhaps other food substances whose full importance is not yet appreciated.

The early history of the developing bird is somewhat different from that of the mammal in that the development takes place in an egg outside of the parent bird's body. Like milk the egg substance contains all the food substances necessary for the young bird's nutrition, but at hatching time a transition occurs which is even more startling than that of the change from mammalian milk diet to mammalian adult diet. The wild chick after emerging from the egg within a few hours at most begins to partake of its adult diet of meat, insects, worms, fruits or seeds gathered by itself in the case of altricial species.

#### Source of Vitamins not Limited

In the light of all these well-known facts which have been fully realized by naturalists for years, it seems strange that anyone could have been persuaded that vitamins or any other essential food constituent could have a solitary or limited source or be of such limited origin that the welfare of any species and of the human race, in particular, would be dependent upon a sole source of sup-

ply. It is not difficult for anyone to admit that milk, species for species, is the ideal food for mammalian young, but this admission does not by any means carry with it the corollary that milk and dairy products are the ideal or the necessary food for mammalian adults. If it were so, then nature must have erred grievously in not providing some source of supply for all her mammalian adult family, men and animals. Without entering at all into an argument as to the desirability of milk and dairy products as foods (and I am fully convinced of their value in moderate quantities along with other foods) the general facts of natural history indicate conclusively that there is no intention in the scheme of nature to have adult mammals or mankind dependent in any degree for growth, health or general welfare on milk or dairy products. The same cannot be said for any other class of foods, whether meat, fish, vegetables, green leaves, fruits or seeds, because in the scheme of nature all these classes are provided and are used by birds, animals and the human race without upsetting the so-called balance of nature.

Milk then is the ideal and necessary food for mammalian young—not the most perfect conceivable, perhaps, because no one is ready to assume that perfection has been reached by evolution—in the same sense that the egg substance is the ideal food for the embryo chick. But the realization of this fact necessarily leads to another, namely, that as milk is the necessary and most desirable food for the period of infancy, it may not be necessary, probably is not the most desirable, and certainly is not the indispensable food after that period.

The history of the evolution of the varied diet of civilized mankind today from the earliest times affords many interesting matters for consideration. In a paper which I read some time ago before the American Chemical Society, I endeavored to show by various known facts, including the diet of the man-like apes, the tastes of children, the diets of savage tribes of the present time and various other considerations, that the diet of the earliest types of mankind in the earliest days of the human race probably consisted either of fruits and meat or of fruits and fish. The evidence for this seems reasonably conclusive. It was long afterward, after the development of agriculture in fact, that the cereal grains became an essential or large part of the diet, in part because of their importance in warding off famine, because they could be stored from year to year and transported from place to place. Later still the meat of domestic animals supplanted at first in part and then wholly the natural supply of wild game, and last of all, and then only in a small part of the world's population, were the dairy products introduced. Milk and dairy products are the last items which have been added to the human diet and I take this to be an indication of the fact that they constitute in the direct meaning of the word the least natural of all human foods.

#### Effect of Diet on Various Races

But if the chief classes of adult foods did not contain all the constituents required in the adult dietary, how was it that the races of mankind survived? The mere statement of the question develops its own answer. The race has survived in all parts of the world and on diets varying from the purely carnivorous types to those which are almost exclusively vegetarian and including the greatest possible variety of foodstuffs. There can be no doubt that in some instances races of mankind or rather individual tribes or groups have been eliminated owing to an inadequate diet, but this I think it is safe to say has been an unusual circumstance and when it has happened it has been from necessity—circumstances impossible to surmount or control and not because of inadequate instinct and knowledge. Famine and inadequate quantitative supply of food has been more frequently the cause of decimation than has the unbalanced ration, because the racial instinct and the racial experience in the way of securing a varied and complete diet are fundamental and very strong. I should like to dwell on these points at greater length but time forbids.

It was characteristic of the primitive and wild tribes of



mankind that they ate only or largely natural and fresh foods. Their methods of preservation—chief of which was desiccation—did not greatly alter the natural properties of the foodstuffs. Fractionation was practiced to a moderate extent only. Modern civilized man, on the contrary, practices food alteration, modification and fractionation to a very large extent. Preservative processes, including high temperature processing, milling processes, such as the manufacture of patent flour, and various manufacturing processes involving the separation of food constituents and their treatment to effect purification, are among these. Fermentation processes, while modifying the food composition, are not to be looked upon as being necessarily of an inimical nature and all of these processes have arguments in their favor—for insuring stability, purity, uniformity, for the warding off of disease by sterilization, and others. They may not be curtailed or discontinued without overbalancing arguments on the other side. Oleomargarine and butter are both fabricated products. Oleomargarine is a synthetic manufactured food. Butter is a fractionated food, the result of a process which utilizes a part but only a part of the original food substance, milk, discarding the milk sugar, protein, mineral salts and water soluble vitamins. Cheese is similarly a fractionated product but less wasteful in its manufacture than butter since protein plus butterfat is retained. But in both cases more stable foods are produced. Thus by different manufacturing processes civilized man has added many modified foods to his diet and thus his diet differs from that of primitive or savage mankind. On the other hand he has an immense variety to select from and it cannot be said that natural foods are lacking. Rather he has more natural foods at his command than did his prehistoric ancestors or their present-day representatives. He can have almost what he will in season and out and for the present, at any rate, it is desirable that a goodly proportion of natural, unmodified foods, meats, fruits, greens and cereals be included in the diet.

#### Dairy Products Not Essential

The statements which I have made in this paper to the effect that with a varied diet it makes no difference whether oleomargarine or butter, in fact any dairy product, is consumed, are not the result of mere speculation, although they could be readily foreseen from the known facts of natural history and natural diets. They have been demonstrated and can be demonstrated, if anybody so desires, repeatedly and easily. If rats, the experimental animals most used in the past for dietetic experiments, are fed a mixed ration of moderate variety, consisting of the food commonly used on the ordinary table, meat, vegetables, grains and fruits, but without milk or dairy products, they get along very well indeed, without developing dietary or deficiency diseases, showing normal growth and health, except for an occasional ailment or infection to which such laboratory animals are always subject. Such rats reproduce unto the nth generation in spite of the absence of their per diem of milk. When to such a diet either oleomargarine or butter is added no noteworthy change results as might have been foreseen and expected. Rabbits and guinea pigs grow to maturity, flourish and reproduce on green things as do the large herbivorous animals, while the carnivorous kinds eschewing vegetable products subsist entirely on meat. These would commonly be considered to be most unbalanced diets, but the addition of dairy products does not change the course of nature. Large quantities, however, might and sometimes do cause serious disorders since milk and dairy products are very different in some of their properties from the natural foods of certain animals.

But it has been said and repeated with insistence that the milk drinking population is the one which controls and rules the world, that it constitutes the dominant civilization today. Surveying all the population and groups of people on earth it is impossible to admit the truth of this since we find very low tribes as well as very high groups of society which make quantitative use of dairy products and milk. But if it were admitted, even tentatively, we would be on a very dangerous ground if we assumed that the results of civilization were due to such a cause largely

or exclusively. Science today knows nothing of the effect of diet considered as an evolutionary factor, knows nothing in fact of any of the fundamental forces of evolution. While witnessing about us the wonderful adaptations of all forms of life to their environment we remain greatly in ignorance of the fundamental causes which react in such a way, as to produce those marvelous and well nigh perfect adaptations. Diet is certainly not used in any of those cases wherein special breeds of domesticated animals are produced by breeding and selection. The best that diet is expected to do is to keep the special breeds in their best physical condition, but no breeder has ever had any hopes and certainly no basis for hopes of producing new and improved forms through the action of special feeding. He takes what nature furnishes in the way of variations and by careful selection retains the qualities which suit his fancy, but the whole matter is quite beyond his control. Furthermore, the races which rule the world today (to use a similar argument) are the meat eating people of the world. They are also and have always been the alcohol-consuming nations of the world and there are numerous other customs and habits connected with these peoples. It would be quite as logical to say that they owe their development to these customs and habits as to say that they are the product of the milk diet. Such statements are absurd and without scientific foundation.

#### The Fallacy of Claims for Milk

The milk consuming part of the world from early historical times until the discovery of America—approximately—consisted of the greater part of Europe, Russia and Siberia, India, Persia, Arabia and East and North Africa. This region with the exception of a portion of East Africa is included roughly between 0 degrees and 70 degrees north latitude and 15 degrees west and 90 degrees east longitude. This is exactly that portion of the world numbering in its natural fauna the most useful milk producing animals, the cow, sheep, goat, ass, reindeer and camel. The rest of the world, including North and South America, Eastern Asia, Eastern Siberia, the Chinese Empire, Japan, Australia and the islands of the South Pacific consumed no milk and yet within historical times and not so long ago as historians now reckon matters, the Chinese Empire reached the highest degree of civilization of that time. A considerable portion of unenlightened and unagricultural Africa drank milk whereas agricultural and cultured China and Japan did not. Africa had cattle and grazing land. China and Indo-China and Japan, while raising cattle, did not use milk and apparently had a decided aversion to its use. Greece and Rome at the time of their ascendancy in the world's history consumed practically no milk and only a moderate quantity of cheese. Butter was an unknown article of diet with them but was in use among the barbarian nations to the North, particularly the tribes of Germany. It is idle, however, to follow this matter. We have no substantial proof that any one article of diet can make or degrade a civilization. The factors are numerous, the causes practically unknown and speculation in the absence of exact data leads nowhere. The whole subject should be dismissed for lack of evidence.

I trust no one will be led to think from anything which I have said that there is any intent in this paper to criticize the immensely valuable scientific work which has been done in the field of nutrition during recent years. Science, if left to itself, will always correct without great delay any errors which may have been committed. I have only the highest regard for the work and the workers in this field in which I have participated in small measure myself. It sometimes happens that the enthusiastic discoverer and investigator in science is somewhat carried away by his discoveries, in the beginning especially, just as the brilliant inventive mind is with the products of his genius. So it has been in a few instances in the case of discoveries in the field of nutrition. But it is dangerous in the light of experiments conducted up to the present time, especially those conducted up to a few years ago, to attempt to change the human dietary generally, to say that too much of this or that is being eaten and that one food should be substituted



for another on dietary grounds alone. The whole story is not complete and will not be complete for many years. In the meantime scientific results which are out of agreement with experience and with the general scheme of nature must be scrutinized with the greatest care until full corroboration is obtained and until all of the facts are known. One of scientific training must have complete faith in scientific methods and results, but there is always risk when the first scientific results in any field are published to the world that commercial interests may attempt to pluck the fruits of science before they are fully ripe.

#### Vitamine Doctrine Not Affecting Dietaries

I have attempted to show you that mankind has been able to establish for itself a complete and satisfactory diet on different natural and agricultural foundations in various parts of the world without the slightest knowledge of the doctrine of vitamins. My own opinion at the present time is that the vitamine doctrine has not essentially affected the dietaries of any considerable number of our people. Certainly its influence on the dietaries of the peoples of the world has been infinitesimal. As a scientific man I regret this in one way, because I should like to see the results of scientific work, when they are fully established and all the facts are at hand, more readily absorbed by the average man. I heartily wish that the entire population could be induced to become more scientific in its habits and methods. In fundamental matters however it is most apt to live according to primary instincts and feelings and today it seems that the population, generally speaking, buys its food according to its taste and its pocketbook as it has always done. Wherever an inadequate diet is found among numbers of people the cause is generally stern necessity, poverty, war, failing food supply, and not failure of instinctive knowledge.

Do you remember the last generation of men and women and the generation before that? Of course, you do. These men and women were your mothers and fathers and grandmothers and grandfathers. Do you remember them as a weak, sickly, puny class on the whole or as an average? Would you say that they compared favorably or unfavorably with the average man and woman of today in physique, physical strength, endurance and mental capacity? Remember that these generations of men and women grew up with absolutely no knowledge of the vitamine doctrine, without any information that such things as vitamins existed. Their diet was determined entirely by instinct and experience. They ate the foods which they preferred and which experience had taught them and their forebears were wholesome and nutritious foods. Beyond instinct and experience they had no guides in nutrition and yet one may be pardoned if he doubts that they were inferior in any respect to the race of men or children of today whose diet is alleged to be influenced by knowledge of the vitamins.

#### Economic Aspect of the Situation

I have but one more matter to lay before you for your consideration and I am done. Up to this point I have considered my subject from the dietetic standpoint only but now I wish to devote a few moments to the economic aspects of the situation.

What would you think of an industry and particularly a food industry which to a large extent allows its raw material to decompose and spoil before working it up into the manufactured or finished product, and then, what would you think of the same industry if after manufacturing its principal product, it deliberately threw away, wasted, or only partly utilized, by-products of as great intrinsic value as the principal product and in quantity two to three times as great? What, for example, would you think of the packing industry if, instead of saving its less valuable by-products, it also threw away 50 per cent of the actual edible portion of the animal carcass, saving only that portion which the public fancied most and making no effort to dispose of or market the rest? Would you then consider the packing industry the important and valuable industry which it is today or would you say that such an industry should be reformed or abolished altogether? You

and the general public would not hesitate long with such a problem before you.

Yet the dairy industry, considered as a whole, does allow a large portion of its raw material to spoil before beginning to manufacture its product. In one direction it only recovers from 30 to 35 per cent of the total solids available in the milk. The remainder, amounting from 65 to 70 per cent, is either thrown away altogether, thrown away all but the casein, or degraded into an animal feed instead of being properly conserved for human food. I do not hesitate to say that the dairy industry today is the most wasteful example of a food industry in civilized countries. That it should be allowed to continue on its present uneconomic basis is an astonishing example of public indifference, prejudice and failure to understand.

Economically the butter industry is indefensible on account of the enormous wastes entailed in the nation's human food supply. To a less extent the cheese industry is indefensible although it wastes or debases only milk sugar, salts and vitamins, whereas the butter industry in addition to sugar, salts and vitamins also wastes or debases the most valuable constituent of all from a dietary standpoint, the casein.

But I should like to call your attention to another point and a more important one, namely whether or not the butter industry can be defended from a dietary standpoint. According to the proponents of the milk diet who state that the health and vigor of the race cannot be maintained unless every man, woman and child drinks at least a quart of milk a day, the health and well-being of our population is entirely dependent upon milk. While we know statements of this sort are grotesque in their falsity, yet for the purpose of the argument let us accept them as facts for the time being and see where they will lead us if we follow them to a logical conclusion. Let us accept without remonstrance our daily ration of one quart of milk per day, although I fancy there will be many who will feel that they are being unjustly dealt with. Let us accept all the arguments of the dairy enthusiasts to the effect that we and the general population will become sick or subnormal if we refuse to take our full allowance. Admitting all that they say we can draw but one conclusion, namely, that milk is so valuable and so important to the nation's welfare that none of it should be allowed to be wasted and that therefore the butter industry and the cheese industry should not be permitted to exist. All milk should be consumed either as whole, fresh milk or as condensed milk and the wasteful dairy industry insofar as it manufactures products from milk and wastes or debases other products must be prohibited. Thus and thus only can the nation be saved dietetically. Thus and thus only can the population be maintained in a state of health. This leaves us without butter and without cheese but we should still have as the spread for bread the very wholesome clean and sanitary produce, oleomargarine.

That is the absolute logic of the situation and the only reasonable conclusion that can be reached from the premises. If the statements of the milk advocates are accepted at their face value, there is not the shadow of an excuse for the existence of any industry which separates valuable constituents from milk or which modifies the milk except insofar as it is necessary to modify it in order to bring it to the consumer—I refer, of course, to concentrating it. Now, as a scientific man I am bound to accept the experimental results which have been obtained in some laboratories and which have been confirmed in others and I am prepared to tell you that I do accept them and accepting them I have no other recourse than to advocate the extension of the milk industry as indicated above and the doing away with the butter and cheese industries. At the same time the oleomargarine industry ought to be indefinitely extended in proportion as the butter industry is curtailed.

#### Falsehoods Against Oleomargarine

Unfortunately the critics of oleomargarine have from the beginning indulged in campaign after campaign of falsehoods. Before the scientific world proclaimed the exist-



ence of vitamins and their role in nutrition, the defamers of oleomargarine were active with their misstatements and their false statements in regard to the raw materials, the methods of manufacture and the value of oleomargarine when used for food. The advent of the vitamin doctrine did not change their mental attitude or their methods in the least. There have been more misstatements and absolute untruths since that time than before. I could quote them by the hundred. You will find the suggestion made over and over again that the only sources of vitamins are milk and dairy products. Here is a quotation which is typical: "Those who want vitamins must get them in their milk, butter, cheese and other milk products." (The Pacific Dairy Review, vol. XXV, No. 19, page 7, May 19, 1921.) One recalls Mark Twain's statement that the difference between a cat and a lie is that a cat has only nine lives.

It is most unfortunate that just at a time that science has announced new discoveries in nutrition to the world and is engaged in the task of developing further information, that so much misleading talk and writing is indulged in for the purpose of increasing the sale of one or another food products. It is still more unfortunate that men of considerable scientific attainments have allowed their names and their work to be used for advertising purposes in connection with purely commercial sales campaigns.

Certain interests are at the present time in the midst of one of the most absurd and dangerous advertising campaigns ever devised or developed. Not only are individual foods and classes of foods praised and recommended by their manufacturers according to their well-known merits, but other classes of foods are criticized, condemned or ridiculed. Not only are these advertising campaigns the lowest form of business ethics but they are a danger to the public understanding of dietetics and a menace to the public health.

In dietetics there is nothing more certain, whether the matter is considered from the scientific or from the more general standpoint of race nutritional history, than that the human race depends for its continued thorough and satisfactory nourishment and welfare on a varied diet. It is highly desirable that a considerable number of foods enter into the diet of every individual. Our present knowledge of dietetics even with the great strides which have been taken in this science during the past ten or twenty years is very incomplete. It is therefore highly undesirable that the public should be told by designing or misguided persons that one article of diet should be largely substituted for others or that certain well-known and long used articles of food are unnecessary and dangerous. Such statements will not advance the cause of sound nutrition. Their chief effect will be to increase and intensify the prejudices, positive and negative, which already constitute too large a part of many persons' ideas in regard to foods and dietaries.

#### Motives of Critics Questioned

This sort of campaigning has another evil effect. Naturally the foodstuffs attacked must enter into a defensive campaign, and since "the best way to parry is to thrust," the defensive tactics are not unlikely to take an offensive turn against the attacking party. Thus a vicious circle is started which is apt to intensify the evil begun and in the end can perform no good function whatever.

When criticism is made publicly and continuously of an important and economical food which has been used uninterruptedly by the people for a long period, the motives of the critic should be carefully examined.

We have good reason to mistrust the so-called scientific man who is wiser than nature herself and who on the basis of laboratory experiments alone feels free to criticize the long experience of the race and of individuals in matters of diet. This is a very old world and the human race is very old. It has survived all sorts of doctrines, notions, hypotheses and theories in religion, politics, laws and customs and in matters of everyday life. Its instincts, especially in the fundamentals on which the well-being of the race are founded, in matters of life and death are very

deep-seated and among the many deep-seated instincts there is none more positively and definitely established than the craving for different classes of food such as meats, fats, fruits and vegetables including the green parts of growing plants—in short for a varied diet consisting of a considerable number of foods. It does not matter for example that laboratory experiments demonstrate that experimental animals can live without fats. The fat craving is very intense and must have an important significance in the human economy. This point was well demonstrated in the late war and the lack of an adequate supply of fats may be said to have been one of the principal causes of the termination of that war in November, 1918. When the results of laboratory experiments conflict with the natural taste of the race in matters of diet, it is not the natural taste which must go by the board but the laboratory experiments.

The whole course of laboratory work in dietetics during the past ten or fifteen years has been to prove what was already known in regard to the necessity of a varied diet and the desirability of certain classes of foods prior to that time. The early statements of the vitamin enthusiasts about the indispensability of milk in the adult diet have been refuted by later experiments as could easily have been foreseen, and was foreseen by broad-minded dieticians with some knowledge of natural history. The extreme statements of six or eight years have been modified and modified again until today they would be laughed at in their original form.

#### Mother's Milk Discredited

Do you remember that not many years ago there were many substitutes on the market for mother's milk for infants? On the basis of chemical analysis it was shown that these substitutes contained all of the then known constituents of human milk in the proper proportions. It was found, however, that infants did not thrive upon these foods and today it would be difficult to find a physician of repute who would recommend any substitute whatever for mother's milk, although in the old days substitutes were commonly recommended. The reason for this was that while a part of the truth had been ascertained the whole truth was not known. But now we are advised by another group of food extremists that milk designed by nature for infant feeding is an ideal adult food, that dairy products should be eaten to an increasing extent to the partial exclusion, at any rate, of other food products. I have no doubt that all this will be altered in time and that it will be shown that milk and dairy products do not constitute the ideal adult foods, that the design of nature is somewhat different for adults than for infants and that a grown person who consumes a varied diet of meats, fats, fruits, vegetables and cereal products will maintain himself in a condition of health and strength superior to the adult nourished to a large extent on milk and dairy products. It is rash to predict but this is simply a statement of the natural tendencies of the race in dietary matters.

This does not mean, however, that milk is not a desirable food when consumed as it usually is, in moderate quantities only, in connection with the usual varied diet, and the same may be said for other dairy products.

In conclusion there is room in the world of commerce and domestic economy for every wholesome food product. All that this industry or any food industry should ask or require is fair play and fair dealing.

#### Butter Fraud Prosecutions Keep Pennsylvania Food Bureau Busy

Violations of the butter-fraud act, passed by the Legislature this year constitutes more than a third of the prosecutions brought by the Bureau of Foods, Pennsylvania Department of Agriculture, during the month of June. Agents of the bureau throughout the state brought sixty-seven prosecutions during the month and of this number, twenty-six were brought against persons charged with selling butter containing an excess amount of moisture. All these prosecutions were brought in Philadelphia.



# FOOD CONTROL MATTERS

## Dr. Manton M. Carrick New Health Officer of Texas

Dr. Manton M. Carrick, recently appointed State Health Officer of Texas by Governor-elect Neff, has had a record of medical and sanitary service which in every way has prepared him for the post. Dr. Carrick volunteered his services to the Army, early in the war, was accepted for service in the Medical Corps, and was given the rank of major, serving with distinction throughout the war.

Born on a farm in Panola County in 1879, Dr. Carrick attended the public schools of Waxahachie and Dallas, graduating from the Dallas Academy and later from the medical department of the Texas Christian University. He took a number of post graduate courses in Chicago, New York, Boston, Philadelphia and Baltimore, and is a graduate of the Army School of Sanitation. During his three years of public health work in the Army, Dr. Carrick had twenty months' work in Johns Hopkins University School of Preventive Medicine. He served as house surgeon at the Texas Pacific Hospital, as assistant quarantine officer at Galveston and as assistant superintendent of the State epileptic colony at Abilene.

During the "cleanest town" contest a few years ago, Dr. Carrick made sanitary surveys in more than 200 Texas towns. He has written numerous articles on public health and other professional subjects, which have been published in the Texas State Journal of Medicine, Texas Medical Journal, Journal of the Southern Medical Association, Holland's Magazine and other publications. He is a member of the Dallas County Medical Society, Texas State Medical Association, Southern Medical Association and is a fellow in the American Medical Association.

Dr. Carrick will have charge of the work of enforcing the State food laws.



Dr. M. M. Carrick, new health officer of Texas, who, under new law, will have charge of food control work in that state.

Smith, of Adrian, two years, Arthur C. Bird, of Lansing, five years and five months until his death in 1910; Colon C. Lillie, of Coopersville, who was the deputy under Commissioner Bird, filling his unexpired term of seven months; Gilman U. Dame, of Northport, two years; James W. Helme, of Adrian, four years, and Fred L. Woodworth, of Caseville, who on July 1 had served as commissioner four and a half years.

At each successive session of the Legislature since 1895 amendments were made to the act creating the department and new duties added, making it necessary from time to time to increase the force of employees in its offices, laboratories and in the field. During Governor Warner's administration the duties and activities of the department were vastly broadened and enlarged along dairy lines. In 1909 the department was vested with the inspection of drug and proprietary medicines. Four years later the state weights and measures law was enacted, the dairy and food commissioner being given the duty of enforcing the law.

All the dairy and food inspectors were made inspectors and sealers of weights and measures. This law added largely to the work of the department along lines of large importance to the people.

In 1917 the Legislature imposed on the department the enforcement of the State prohibition laws. The obstacles encountered and the exciting and often humorous happenings incidental to prohibition enforcement during the first four and a half years would make a most readable book. Commissioner Woodworth personally directed the enforcement of the dry law and what is a source of personal satisfaction to him is that since the law went into effect not a single one of his enforcing agents lost his life or was seriously injured.

## Report of Commission on Milk Standards

A summary report by the Commission on Milk Standards for the nine years ending December 10, 1920, recently published by the U. S. Public Health Service, contains matters of much interest to health officers and to chemists and bacteriologists.

Standard whole milk, says the report, should contain not less than 8.5 per cent milk solids not fat and 3.25 per cent milk fat; standard skim milk not less than 8.75 per cent of milk solids; standard cream not less than 10 per cent milk fat and be free from all constituents foreign to normal milk.

The commission believes that it is necessary to permit standardized and adjusted milk; this despite the fact that it recognizes the ease with which milk is contaminated and the difficulty of so controlling standardizing, skimming, homogenizing, souring, etc., as to prevent contamination and the use of inferior materials.

## Gov. Blaine Vetoes Bleached Flour Bill

Governor Blaine of Wisconsin has vetoed the assembly bill permitting the manufacture of an artificially bleached flour on the ground that it would permit fraud and deception and would nullify the results of the existing law prohibiting the use of chemicals in bleaching.

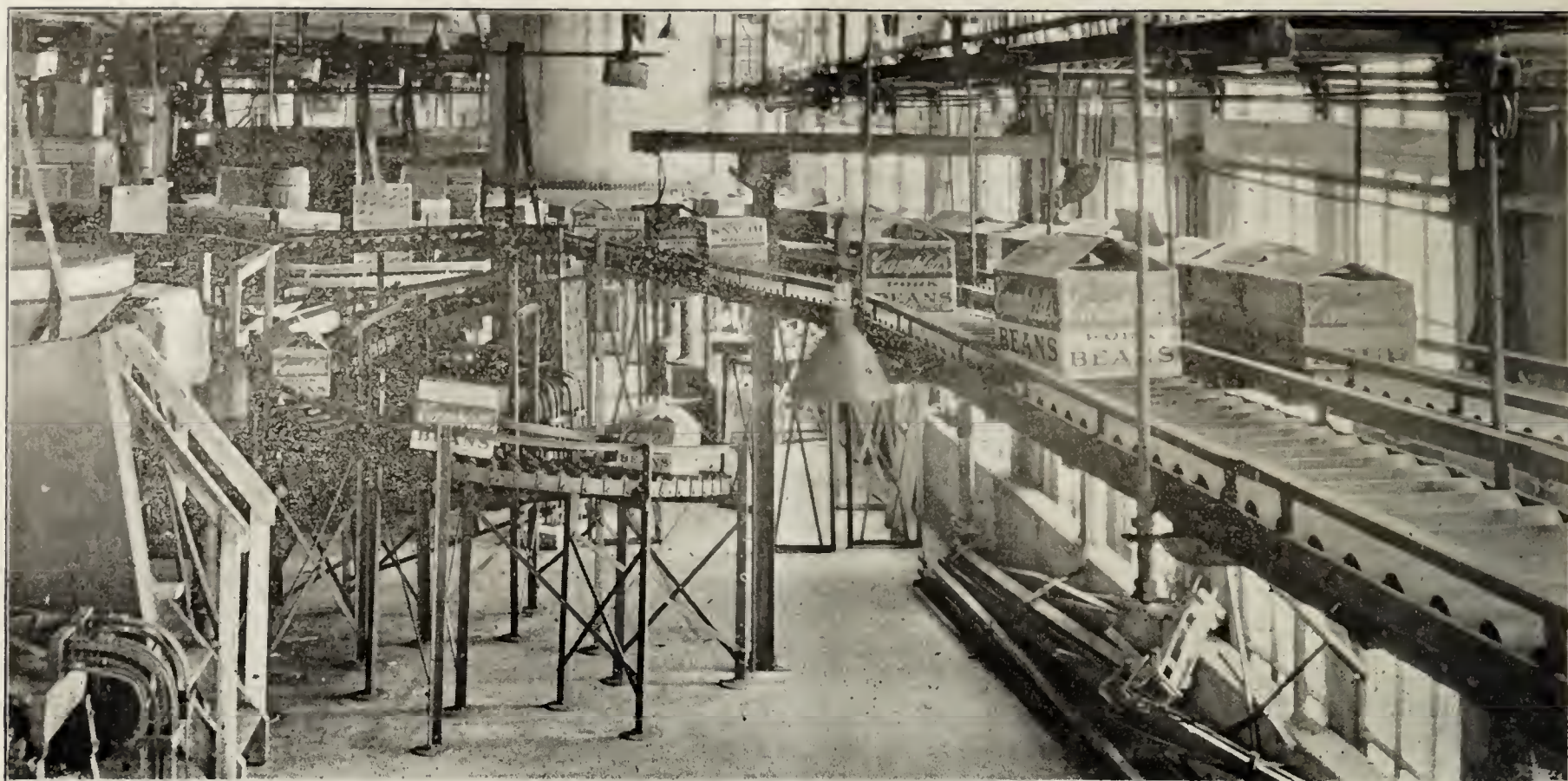
## Michigan Food and Drug Department Out of Existence

With the passing of the Michigan Food and Drug Department, originally created 27 years ago, the powers and duties of that department, with the exception of those relating to the enforcement of prohibition, will be vested in the newly created Department of Agriculture.

The State's first pure food law was enacted in 1895, two years after the Dairy and Food Department was created. In 1917 it was recreated by legislative act as the Food and Drug Department. C. E. Storrs, of Muskegon, appointed in 1893, was the first dairy and food commissioner. He served two years but owing to the exceedingly limited appropriation—\$20,000 for the biennial period—he was unable to accomplish much in the way of reducing adulterations in food products, or in prosecuting food adulterators, who in those days were exceedingly numerous.

With the passage of the pure food law in 1895, and the appointment by Governor Pingree of Elliott O. Grosvenor, of Monroe, as commissioner, began the real work of the department. Succeeding Mr. Grosvenor, who served four years, the successive commissioners have been: Wilber B. Snow, of Kalamazoo, who served two years; Alfred W.





Gravity carrier system in the plant of the Joseph Campbell Company, Camden, N. J.

Several large food manufacturing plants have found gravity carrier systems a practical method of carting packages from one floor to another. One of the largest gravity carrier systems ever manufactured has been installed in the new plant of the American Sugar Refining Company at Baltimore, Md. A similar system in use in the plant of the Joseph Campbell Company, soups and canned beans, Camden, N. J., is shown in the accompanying illustration.

One of the features installed in the Baltimore sugar plant is a spiral system extending from the ninth floor to the ground, with a branch at every floor, to handle bags and cases of sugar. The switch at each floor can be automatically swung by pressing a button at the starting place on the ninth floor.

This conveyor system has been built by the Mathews Gravity Carrier Company, Elwood City, Pa.

Standard gravity carrier systems are built in eight-foot sections, which can be permanently set up in a building or mounted on heavy casters and moved about from place to place. In the ball-bearing system an incline of four per cent, or a half inch to each foot, is sufficient for the packages to keep themselves moving once they are started.

### Canned Foods Wrongly Blamed for Illnesses

**T**HE National Canners' Association has issued the following bulletin:

It is well-known to those in the canning industry that a large per cent of the illness alleged to have resulted from eating canned foods has been due to other causes. The National Canners' Association has been systematically investigating these cases for years and has found the final diagnosis almost invariably proves to be entirely different from that originally given to the public.

"Such a case came into prominence a few weeks ago. The statement was made that twenty-six students at the Georgetown Medical School in Washington, D. C., were in a serious condition from 'ptomaine poisoning, supposed to have been caused by eating canned food.' The National Association immediately wired to Dr. M. J. Rosenau, head of the department of preventive medicine and hygiene, Harvard Medical School, to come to Washington to assist the local authorities in investigating the case.

"That bread pudding, containing a toxic producing organism produced the illness, was the substance of the report submitted by the District of Columbia health officer, in co-operation with the U. S. Bureau of Chemistry, and Dr. Rosenau. The canned food eaten was entirely exonerated from blame.

This report was placed in the hands of the local papers and they corrected the original report.

### Allegations Unjust to Canning Industry

"It is a fact, however, that much of the damage done by allegations can never be undone, because many people will read the first account of the case—the circumstance will go down in their minds as one more count against canned foods—and the fact that canned foods were finally exonerated will pass by unnoticed. It is for this reason that the National Association plans the campaign to inform boards of health, both state and municipal, regarding the safety of canned foods. In addition to this physicians and medical authorities in general would be informed regarding the findings made by the scientific men in charge of the research work, conducted under the new plan of the National Canners' Association.

### Investigations Unearth Many Odd Features

"Among the peculiar incidents brought to light in the course of these investigations was the case which occurred a few months ago in Texas. Two children were reported to have died from eating potted ham. A startling and rather gruesome feature came about when it was discovered that the mother had administered strychnine to the children, due to a disordered mental state, and later committed suicide. Not long ago 600 prisoners in Ohio State Penitentiary were reported ill from canned parsnips. Subsequently it was proved, according to the warden's statement, that canned parsnips had nothing whatever to do with poisoning, but that wild parsnips, mixed in with some fresh ones, had caused the trouble.

"In Chicago, a great deal of prominence was given to the death of a man described as an aged miser, supposed to have been immensely wealthy, and to have died from 'ptomaine' poisoning through eating canned sardines. The investigation of this case proved that death came from acute general peritonitis, which is of course a disease which cannot be transmitted by canned food. Many other similar cases might be mentioned.

"It is small wonder that a prejudice against the use of canned foods exists in the minds of the public, considering the wide publicity given to such cases as cited. The canning industry should realize where the blame lies, and work together intelligently to overcome and to counteract this prejudice."



# NEWS OF THE FOOD TRADE

## Sugar Consumption New High Record

Official Figures Will Probably  
Show Nearly 100 Pounds  
Per Capita

Sugar consumption in the United States will make a new high record in the fiscal year ended with June. The quantity imported from foreign countries, says a statement by The National City Bank of New York, was greater in the ten months for which figures are now available than in the corresponding period of any preceding year. The domestic production of the year was bigger than ever before and the exportation only about one-half that of the corresponding ten months of the preceding year. These official figures of the ten months' imports and exports plus the domestic production for which a record is already established, adds the bank's statement, give a net total available for consumption so much in excess of any earlier year that we may not be surprised if the official figures showing the average per capita consumption in the fiscal year 1921 runs up nearly to 100 pounds per capita against 91½ pounds per capita in the fiscal year 1920, the former high record year, 82 pounds in 1919, and 89 pounds per capita in the high record pre-war year 1914.

This increase in sugar available for consumption in 1921 as against the already established record of 91½ pounds per capita for the fiscal year 1920 is not due to material increases in imports from foreign countries or our islands but to increased domestic production and a big fall off in the exports. While the records of imports from foreign countries do show an increase of 23,000,000 pounds in the ten months ending with April, 1921, as compared with the corresponding ten months in the fiscal year 1920, the former high record year, the imports from our islands in the same period show a slight reduction, suggesting that the total quantity of sugar brought into continental United States in the fiscal year 1921 will not differ materially from that of the fiscal year 1920, but the fact that the domestic production in the past year exceeded that of any earlier year by about a half billion pounds and that the exports in the current fiscal year are only about one-half those of 1920, makes it apparent that the quantity available for consumption in the fiscal year 1921 will materially exceed that of any preceding year.

One especially striking feature of this prospective new high record in sugar consumption lies, adds the bank's statement, in the fact that it has been made in the face of, and in spite of the highest prices for sugar known in the experience of the present generation. Average import prices of raw sugar brought from foreign countries ranged from 8.3 cents per pound in March, 1920, to 16.1 cents in June, then slowly declined to 15 cents per pound in September, 11.3 cents in November, 9.8 cents in Decem-

ber, 6.1 cents in January, 1921, and 4.9 cents in March and April, though the average import price of the raw sugar imported from foreign countries in the ten months ending with April, 1921, was 10.4 cents per pound against 9.1 cents in the full fiscal year 1920, 5.6 cents in 1919, and exactly 2 cents per pound in the fiscal year 1914, all of which year preceded the war. Thus the import price of the raw sugar imported from foreign countries in the ten months ending with April, 1921, averaged just five times as much per pound as in the fiscal year 1914, while the per capita consumption for 1921 will, despite this quintupling of price, be materially greater than when sugar was being imported at 2 cents per pound as against 10.4 cents in the ten months of the current fiscal year for which figures are now available.

The exports of refined sugar in the fiscal year 1921, adds the bank's statement, show a big falling off and will amount to about one-fourth as much as in 1920, the total exports of refined sugar in the ten months ending with April, 1921, having been but 311,127,455 pounds against 1,235,086,004 in the same months of last year, though the re-exportation of foreign sugar in the form imported enormously increased, showing for the nine months ending with March, 1921, for which figures are now available, 160,943,907 pounds against 1,764,984 in the same months of 1920. Thus this increase in the quantity of raw sugar re-exported, when taken in conjunction with the tremendous falling off in exports of refined sugar, makes it apparent that the combined exports of refined and raw sugars in the fiscal year 1921 will be only about one-half as much as in 1920.

This increase in consumption by the people of this country, adds the bank's statement, will probably place the United States at the head of the list of world's per capita consumers of sugar. Prior to the war, Great Britain's sugar consumption was slightly more than that of the United States, standing at about 93 pounds per capita, while Australia was still higher than the mother country, but British consumption has fallen to 63 pounds per capita in 1920, making it apparent that our own per capita consumption in the fiscal year 1921 will exceed that of any other country except possibly Australia for which no recent consumption statistics are available.

### Food Important Export Item to Germany

A bulletin published by the National City Bank of New York states that the principal articles forming our rapidly growing exports to Germany are chiefly food and manufacturing material. Of the former, wheat and flour exports to that country in the full fiscal year will aggregate about \$65,000,000, wheat alone amounting to about \$50,000,000 and flour approximately \$15,000,000. Bacon will show a total of \$15,000,000 and lard about \$40,000,000. Condensed milk exported to Germany amounts to about \$6,000,000 in value, oleo oil slightly less than \$2,000,000, and cottonseed oil about \$1,000,000.

## Says Animal Decline Menaces Country

Farm Expert Declares Census Reports Show One-third Drop in  
20 Years

An animal shortage that is menacing our meat supply has been discovered in the figures of the Federal Census report by Herbert Myrick, a farm expert. The twenty years, from 1900 to 1921, have seen a reduction by one-third of the number of cattle available for each 100 persons, while the sheep supply is reduced nearly two-thirds and the number of hogs is fully 41 per cent less now.

Declaring that this "alarming shortage" in live stock is such as to furnish a meat supply only about half as great for each person in the country as formerly, Mr. Myrick said that "the decline during recent months in prices to producers is so utterly unjustified as to constitute the gravest economic crime ever perpetrated upon the farmers of America."

Other figures were given to show that 20 per cent fewer pounds of meat were exported during the present fiscal year than during the previous year, while imports totaled 175,000,000 pounds of fresh meats, or nearly four times as much as two or three years ago. More than half of these imports, he said, were mutton and lamb from Australasia.

Mr. Myrick charged that the United States Department of Agriculture for years has overestimated the numbers of sheep and swine and declared that the department's estimate for January, 1920, was in error no less than 28 per cent, as he said that the census found only 34,900,000 sheep, compared to the department's estimate at the same date of 48,600,000.

"The census also reveals 14,000,000 fewer hogs than the department estimates," he continued, "having found only 50,000,000 pigs on farms or 19 per cent less than the department's estimate of 72,000,000. The steady decline in the numbers of cattle since the census was taken is emphasized by the decrease of nearly 11 per cent in the number slaughtered during the last eleven and a half months."

### Sugar Refining Companies Win Suit

The American and Franklin sugar refining companies scored a victory in the trial of the first of several suits brought by them to enforce contracts made a year ago for sugar at 22½ cents a pound. A jury in the U. S. District Court at Baltimore, Md., with Judge Rose presiding, awarded damages of \$5,404.31 to the Franklin company.

### Fleischmann's Yeast at Soda Fountains

The Fleischmann Company, New York announced recently in a series of newspaper advertisements that its yeast is now obtainable at soda fountains, where it is served as an ingredient of several drinks.



# Meat Packing Country's Largest Industry

## Census Figures for 1919 Show Products Manufactured Totaled \$4,246,290,000 in Value

Census figures made public by the Bureau of the Census, Department of Commerce, show that the meat packing industry is the largest in volume of business in the United States, is not in the entire world. The figures, gathered from 1,305 establishments, show that for the year 1919 this industry paid out for raw materials, principally for live stock, the sum of \$2,774,901,000, and that the total value of the products from his material was \$4,246,290,000. In other words, for every dollar of value in the finished products the packers

paid out for raw materials, principally live stock, about 89 cents. The packers' manufacturing margin including wages and all production expenses amounted to only about 11 per cent. of the total value of the products.

These figures show in the case of beef, for instance, that in 1919 while the packers paid \$1,055,319,000 for only 10,878,000 head of cattle, the 5,062,240,000 pounds of fresh and cured beef products derived from these animals had a value of only \$875,166,000.

In other words, the dressed and cured

beef had a value of \$18153,000 less than the sum paid for the cattle from which it was prepared. The packers were able to do this by reason of sales of by-products which, before the packers developed scientific methods, were largely destroyed or wasted.

The statistics for 1919 and 1914 are summarized in the table below. Those for 1919 are preliminary and subject to such change and correction as may be necessary from further examination of the original reports.

## Census of Canned and Dried Fruits and Vegetables

A preliminary statement of the general results of the 1920 census of manufactures, covering the calendar year 1919, for the canning and drying of fruits and vegetables has been issued by the Bureau of the Census, Department of Commerce. It consists of a detailed statement of the value of canned and dried fruits and vegetables packed during the years 1914 and 1919 in the United States as a whole.

Returns were received from 3,190 establishments engaged in the industry in 1919, the products of which for that year were valued at \$416,146,000. At the census of 1914, there were 3,250 establishments reported with products valued at \$158,016,000. While there was then a decrease of 60 in the number of establishments, the total value of products increased \$258,129,000, or 163.3 percent.

From 1914 to 1919 the value of canned vegetables increased \$80,205,000, or 95 percent; canned fruits, \$103,068,000, or 414 percent; dried fruits, \$51,252,000, or 147.4 percent, and canned soups, \$3,980,000, or 50.5 percent.

The value of canned soups does not include the product of slaughtering and meat packing establishments.

Of the total number of establishments reported for 1919, 101 were engaged primarily in other industries, but packed fruits and vegetables to the value of 13,588,000 as subsidiary products. In 1914, 97 similar establishments packed vegetables and fruits to the value of \$8,840,000.

The following table shows the value of canned and dried fruits and vegetables packed during the years 1919 and 1914. The figures for 1919 are preliminary and subject to such change and correction as may become necessary upon further examination of the original reports.

Number of establishments	1919	1914
Value of products..	\$416,145,000	\$158,016,000
Vegetables, canned.	164,619,000	84,414,000
Fruits, canned .....	127,965,000	24,897,000
Fruits, dried .....	86,024,000	34,772,000
Soup, canned .....	11,857,000	7,877,000
All other products (1) .....	25,680,000	6,056,000

## Canners Company Bring Million Dollar Suit

The Curtis Corporation, Long Beach, Cal., packer of ripe olives, has filed a suit for \$1,000,000 damages in the Detroit Federal Court against members of the Detroit Board of Health. The complaint alleges the corporation's business was damaged to that extent through seizure in October, 1919, of its product, of a quantity following the death of five persons, due, the Board of Health is said to have declared, to botulinus poisoning.

MATERIALS		1919	1914
A Total cost .....		\$3,774,901,000	\$1,441,663,000
Animals slaughtered .....	Cost	3,055,495,000	1,199,642,000
Beeves .....	Number	10,818,000	7,149,000
	Cost	1,055,319,000	490,108,000
Calves .....	Number	4,395,000	2,019,000
	Cost	95,720,000	27,623,000
Sheep, lambs, goats and kids.....	Number	13,523,000	15,952,000
	Cost	146,965,000	84,813,000
Hogs .....	Number	44,519,000	34,442,000
	Cost	1,757,491,000	597,098,000
All other materials .....	Cost	719,406,000	242,021,000
PRODUCTS			
Total value .....		\$4,246,290,000	\$1,651,965,000
Fresh meat:			
Beef .....	Pounds	4,932,284,000	3,658,334,000
	Value	846,806,000	421,297,000
Veal .....	Pounds	422,928,000	194,699,000
	Value	83,884,000	26,299,000
Mutton, lamb, goat and kid.....	Pounds	501,201,000	629,233,000
	Value	120,451,000	74,676,000
Pork .....	Pounds	2,112,243,000	1,877,099,000
	Value	532,075,000	226,535,000
Edible offal and all other fresh meat .....	Pounds	516,983,000	296,667,000
	Value	59,832,000	20,576,000
Cured meat:			
Beef, pickled and other cured....	Pounds	129,960,000	91,572,000
	Value	28,360,000	14,395,000
Pork, pickled and other cured....	Pounds	4,145,232,000	2,929,310,000
	Value	1,217,420,000	393,605,000
Canned goods .....	Pounds	305,943,000	160,799,000
	Value	96,904,000	26,418,000
Sausage:			
Canned .....	Pounds	161,002,000	74,004,000
	Value	27,985,000	9,845,000
All other .....	Pounds	629,701,000	435,147,000
	Value	145,601,000	58,350,000
Lard .....	Pounds	1,372,550,000	1,119,189,000
	Value	415,817,000	120,414,000
Lard Compounds and substitutes..	Pounds	521,122,000	396,398,000
	Value	123,724,000	33,037,000
Oleo oil .....	Gallons	20,339,000	16,502,000
	Value	30,953,000	11,926,000
Other oils .....	Gallons	6,721,000	6,715,000
	Value	9,153,000	4,010,000
Tallow and oleo stock.....	Pounds	242,084,000	209,614,000
	Value	36,536,000	13,733,000
Oleomargarine .....	Pounds	123,639,000	60,388,000
	Value	36,778,000	9,819,000
Hides and pelts			
Cattle hides .....	Number	10,818,000	7,159,000
	Value	185,020,000	69,959,000
Calf .....	Number	3,353,000	1,464,000
	Value	24,797,000	3,513,000
Sheep, lamb, goat and kid.....	Number	12,244,000	15,917,000
	Value	33,780,000	13,624,000
Fertilizers and fertilizer material..	Tons	391,000	294,000
	Value	18,315,000	8,737,000
All other products (1).....	Value	172,099,000	92,197,000

(1) Includes value of ammonia, butter, butter reworked, condensed milk, glue, glycerine hog hair, ice, sausage casings, scrapple, soap, wool, etc., and amount received for slaughtering and refrigeration for others.



# Flour Mill Products Worth Two Billion Dollars in 1919

## United States Census Report Shows 10,712 Establishments—Wheat Flour 70 Per Cent of Total

A summary of the general results of the 1920 census of manufactures for the flour-mill and gristmill industry has been issued by the Bureau of the Census, Department of Commerce. It consists of a detailed statement of the quantities of materials consumed and the quantities and values of the various products manufactured by merchant mills during the year 1919.

Reports were received from 10,712 establishments, which did merchant grinding during 1919, the products of which were valued at \$2,052,850,000. At the census of 1914, there were reported 10,788 establishments, with products valued at \$877,680,000. There was thus a decrease of 76 in the number of establishments, but an increase of \$1,175,170,000, or 133.9 per cent. in the value of products.

The output of wheat flour, which represented about 70 percent of the total value of products of the industry in 1919, showed an increase of 16,074,743 barrels, or 13.8 percent in quantity during the five-year period, while the value increased \$892,749,000, or 164.2 percent.

With the exception of hominy and grits, for which there was a decrease of 66.9 percent in quantity and 32.8 percent in value from 1914 to 1919, all the other products enumerated in the table showed substantial increases in value, although there were comparatively small decreases in the quantities reported for buckwheat flour,

corn meal and corn flour, and feed and offal.

The comparative statistics for 1919 and 1914 are summarized in the following statement. The figures for 1919 are preliminary and are subject to such change and correction as may be necessary from a further examination of the original reports.

### O. L. Deming Retires from American Can Company

Due to poor business, the American Can Company on July 1 discontinued its advertising department and transferred some of the work covered by this branch to the purchasing department. This will mean the culmination of the services of O. L. Deming, who during the 11 years that he has been in charge of this department, has built it up to its present state of efficiency, while at the same time handling the publicity end for the organization.

Mr. Deming is one of the best known men in the American food trade and has been for more than a quarter of a century. Previously a trade paper editor, he established and edited the Chicago "Grocer," and at various times has been the editor and manager of such well known papers as the "Canner," the "Food Law Bulletin" and the "National Canner."

At the time he left trade journalism to

go with the American Can Company he was president of the National Food Association, and few men are better known in grocery, and especially in canned goods circles.

Mr. Deming has not yet announced his future plans, but it is probable that he will remain in food trade channels.

### Food Control Officials Disapprove Calder Bill

The Calder Bill for uniform food legislation was declared detrimental to the best interests of the people in a resolution adopted at the final session of the North Central States Association of Food and Drug Officials, in that it takes away the rights they have had to protect themselves as to food and drug commodities. The meeting was held at Sioux City, Iowa.

The Haugen slack filling bill was approved by the association in a resolution declaring many States had enacted similar legislation and that States without this bill were not protected from the practice of slack filling of packages of food products. A copy of the resolution will be forwarded to the chairman of the House Committee on Agriculture at Washington.

W. S. Frisbie, of Lincoln, Neb., chief of the food and drug department of Nebraska; considered the subject of ice cream, the standards of which varied greatly in the States, he said. The standards are gradually approaching each other and eventually there will be a uniform standard throughout the whole of the United States, the speaker predicted. Details of manufacturing were presented. It was stated that 14 percent of butterfat was required by the Federal Government, while in some States the percentage ranged from 10 to 12 percent.

#### Discusses Milk Production

In a paper on milk W. D. Hayes, of Sioux City, indicated the essentials for a safe city milk supply. The requirements necessary for the production of a market supply were stated to be a healthy cow, dry-handed milking, an interested milker, a hooded milking pail, boiled or otherwise sterilized containers, efficient refrigeration and proper pasteurization.

The next meeting of the association will be held October 10, 1921, at St. Paul, Minn., at which time a national dairy exhibition will be in progress in that city. Dr. William H. Callahan, in charge of the Federal station at Minneapolis, was elected secretary of the association to serve during the remainder of the current year.

The manner in which oats is adulterated to the disadvantage of the consumer was outlined by W. H. Callahan, chief of the Minneapolis station of the Bureau of Chemistry, in an address.

"Mill oats provides the medium for the greatest number of offenses in this respect," Mr. Callahan declared. "It has been found a rare instance where mill oats contain more than 5 percent of real oats and oftentimes the consumer is considerably misled. This product came into existence in the northwest at the time when Minneapolis millers began getting patents on high grades of flour.

"It has reached a point now where it merely provides a camouflage for the owner to dump on the public wild oats instead of the real oat product. And in this connection the wild oats is becoming more of an intruder."

Number of Establishments.....	1919 10,712	1914 10,788
MATERIALS		
Wheat .....Bushels	613,094,420	545,728,431
Rye .....Bushels	15,487,439	12,813,831
Corn .....Bushels	113,768,512	180,115,704
Buckwheat .....Bushels	4,727,465	5,478,045
Barley .....Bushels	21,151,343	20,288,396
Oats .....Bushels	58,581,223	50,227,050
Grain, other than above.....Bushels	3,173,285	4,277,864
Alfalfa ... ..Tons	215,879	87,884
Other material .....Tons	259,200	121,965
PRODUCTS		
Total value .....	\$2,052,850,000	\$877,680,000
Wheat flour .....Barrels	132,478,513	116,403,770
Value	1,436,589,000	543,840,000
Rye flour and rye graham.....Barrels	2,527,752	1,937,385
Value	21,236,000	7,845,000
Buckwheat flour .....Pounds	90,137,407	125,622,189
Value	5,244,000	3,755,000
Barley meal .....Pounds	91,808,914	14,000,789
Value	3,217,000	242,000
Corn meal and corn flour.....Barrels	10,683,878	16,327,993
Value	82,066,000	54,963,000
Hominy and grits.....Pounds	288,525,592	870,364,453
Value	9,247,000	13,768,000
Oatmeal .....Pounds	28,120,649	30,451,581
Value	1,101,000	758,000
Bran and middlings.....Tons	4,760,957	4,666,534
Value	211,467,000	104,703,000
Feed and offal.....Tons	4,563,553	4,753,280
Value	262,736,000	137,068,000
Breakfast foods, rolled oats, etc.....Pounds	96,501,673	92,676,085
Value	4,350,000	2,932,000
All other cereal products.....	10,033,000	2,092,000
All other products.....	5,564,000	5,714,000

(1) In addition, in 1919, 36 establishments engaged primarily in other industries, manufactured flour-mill and grist mill products, valued at \$46,515,000. In 1914 there were 40 such establishments with products valued at \$9,046,000.



# Secretary Wallace Discusses Meat Packing Control by Government

## Head of Department of Agriculture Says Law Will Be Administered Fairly to All Concerned

In an address on the Department of Agriculture and its relation to business, given before a group of New York business men, Secretary Wallace referred briefly to the relation of the department to business through its administration of the various regulatory laws which have been passed since 1900. He said that during the first forty years of the life of the department its chief endeavors were in the direction of promoting production, but beginning about 1900 it had become more and more closely related to business of various kinds.

### Bills Now Before Congress

Referring to the two bills before Congress, one dealing with future trading in grain and the other dealing with the packing plants, Secretary Wallace said that the department had not initiated either of these measures; that they have grown out of a belief on the part of large numbers of farmers that our grain exchanges are places where the prices of farm grains are manipulated to the disadvantage of the farmer, and that our larger packing enterprises are conducted in such a way as to produce violent and unfair fluctuations in the prices of live stock. He said that our present system of making prices for grains on the various grain exchanges is the best system which has yet been devised; that possibly some time in the future some better system might be discovered, but, until that had been done, we should do nothing to interfere with the orderly and legitimate operation of grain exchanges.

Referring to the packer legislation, Secretary Wallace said that the business of meat packing is absolutely essential to the continuation of our live-stock industry.

"The development of these plants has been a matter of national pride," he continued. "They offer a market for cattle, hogs and sheep every business day in the year. But their very size has given them such a dominance in the business of killing live stock and marketing meat products that they are, in effect, if not in fact, of the nature of public utilities. It would be greatly to the disadvantage of our agriculture if anything should be done which would impair the efficiency with which these plants are conducted or impose unjust additions to their cost of operation. But the farmer is entitled to know that these plants are operated in such a way as to give him just prices for his live stock, and the consumer is entitled to know that the meat products are marketed at a reasonable cost."

The Secretary declared that if such legislation should be enacted and its administration should be placed under the Department of Agriculture, the law would be administered fairly to all concerned and in full knowledge of the importance of the industry and its necessity to a prosperous agriculture.

### Agricultural Exploitation About Ended

Referring to the need for a closer relationship between agriculture and business, the Secretary said:

"The period of agricultural exploitation is practically at an end and, if production is to be maintained, every effort must be made to put agriculture on a thoroughly sound business basis. In times past those of our farmers who have gotten ahead financially have done so largely through the increased value of their land caused by a growing population. The farmers of the future can not hope to profit largely in this way. If production is to be maintained, the farmer must be able to get prices for his products which will give him a fair rate of interest on the money he has invested and a fair wage for his labor and the labor of his family. Lacking this the farmer will turn his efforts in some other direction.

"Now, if the farmer is to get a fair wage and, at the same time, sell his crops at prices which the people of the country can afford to pay, we must not only increase our production, but we must find better methods of distribution. We must get the products of the farm to the consumer in the city with less waste and at less relative cost. Also must learn how to take some of the speculative risk out of farming.

"In one sense the farmer is the greatest speculator in the world. His business is subjected to risks which he can not insure against. He is at the mercy of the weather. In an hour a hail storm may completely destroy the results of six months' work. Drought and floods alike reduce his income. He has no means of correctly estimating the demand for the crops he proposes to produce. He can not control production as can the manufacturer. He has nothing to say about the price. What he gets for his crops constitutes his wages, but he does not know until six months or a year after the work is done what his wages are to be. \* \* \* If in times past we had seen more clearly the interdependence of agriculture and business, if we had given the same scientific study to the methods of distribution that we have given to methods of production, it is reasonable to believe that much of the trouble we are now experiencing might have been avoided.

### The Beginning of a New Period

"When we have worked our way through this period of depression and have shaken off the terrible grip of these economic forces which are now causing us so much discomfort we will find ourselves at the beginning of a new period in our national life. Up to the present time this Nation, like Topsy, has 'just growned.' In the future there must be a more conscious direction of our growth and a much closer coordination of our various activities. The relation between agriculture and business will become more and more intimate.

"The Department of Agriculture, charged with the duty of promoting agriculture in its broadest sense not for the benefit of the farmers alone or even primarily but for the benefit of all our people, may very properly inquire into everything which has a bearing upon

our agricultural welfare to the end that our agriculture be put upon a sound and enduring basis which will insure an abundant production of food at prices our consuming population can well afford to pay. Without lessening for a moment our activities in scientific research, our efforts to find cheaper methods of production, our improvement in varieties and breeds, we must give more attention to the problems of finance and of marketing and of everything else which directly or indirectly influences both production and price."

## China as Fruit Powder and Soft Drink Market

The consumption of soft drinks in China is chiefly by the foreign population, and, as elsewhere, greater quantities are used in warm weather than at other seasons, says a consular report. The Chinese in general are not familiar with the cold drinks common in the United States, as, through habit and custom, they drink principally hot liquids, such as tea and samshui, or Chinese wine. It is believed, therefore, that the importation of citric acid into China in this connection has not as yet assumed any large proportions, although it is understood to be imported to some extent for the use of chemists. However, as the product does not appear separately segregated in the Chinese Maritime Customs import statistics, it is practically impossible to ascertain accurately the quantity imported into China. If prepared for use in the manufacture of of aerated bottled drinks, however, it seems probable that citric acid would have a considerable consumption for this purpose among the various bottling companies in Shanghai.

China as yet has no patent or trade mark laws, and in introducing such a product into the Chinese market as a fruit powder satisfactory protection can be secured in the treaty ports by registry of trade-marks with the American consulates or consulates general, and until a trade-mark has become extensively known there should be no danger of infringement. In this connection, as in the case of all goods intended for China, intelligent and careful consideration should be given to the methods of marketing, upon which the successful presentation of the product so largely depends, such problems preferably being intrusted only to those who have made a special study of advertising in China.

### G. P. Lauinger Heads California Jobbers

The annual meeting of the California Wholesale Grocers' Association was held recently at Del Monte and officers were chosen for the ensuing year as follows: President, George P. Lauinger, secretary-treasurer of Tillman & Bendel, San Francisco; first vice president, V. H. Tuttle, of R. L. Craig & Company; second vice president, S. O. Meyer of Getz Bros.; third vice president, W. R. H. Weldon, of the Channel Company; treasurer, Perry T. Cumbersom, of the William Cluff Co. Executive Committee, J. Karft, of Haas, Baruch & Company, and P. C. Dreschler, of the Mebius & Dreschler Company.

P. C. Dreschler served for twelve consecutive years as president of the organization and was retired at his earnest solicitation.



## Macaroni Manufacturers Discuss Problems

Annual Convention held in Detroit—C. F. Mueller, Jr., Jersey City, Elected President.

The eighteenth annual convention of the National Macaroni Manufacturers' Association, held at Hotel Statler, Detroit, June 9 and 10, was one of intense interest to the industry, because of the numerous problems at present effecting this group of manufacturers, due to the general business depression.

The annual reports of President James T. Williams of Minneapolis and Secretary M. J. Donna of Braidwood, Illinois, showed that the association is in a flourishing condition and that its official organ, *The New Macaroni Journal*, had injected life into the industry and particularly in the workings of the National association.

Considerable time was given to the discussion of several plans to increase the consumption of macaroni products and a special committee was assigned the work of raising funds to carry on this program.

The proposition to make an eight-ounce package the minimum to be packed by any plant, called forth a lengthy discussion as did the establishment of a uniform container. It was finally decided that the eight-ounce package was the logical minimum weight package and that manufacturers should, as soon as possible, conform to this weight. The advantages of a four-dozen container over the present two-dozen container were presented by the advocates of the former but the arguments set up by those favoring the smaller container, backed by the demands of the jobbing trade, led to a decision favoring the container carrying two dozen cartons. An attempt to compromise at a three dozen container also failed because manufacturers were of the opinion that if the conditions warranted a larger container, the 48 carton was preferable to the 36 and that since no change was advisable under present conditions, the 24 container should be retained.

The question of freight rates on macaroni products came up for its annual consideration. For years manufacturers of alimentary paste products have been striving to get their food classified the same as grain products and food preparations, cereals, which would give macaroni, spaghetti, noodles, etc., a rate more in keeping with competitive products. This matter was referred to a special committee, authorized to act for the association between conventions and to report as soon as progress in this important matter could be made.

Much time was given to the report of the work done in the National Macaroni Laboratory by its director, Dr. B. R. Jacobs, particularly with reference to semolina, macaroni standards and tariff duties on alimentary paste importations. The association went on record as favoring a fair duty on imported alimentary paste products, the duty recommended being three and one-half cents per pound on products without eggs and four cents per pound on products containing eggs. Dr. Jacobs was urged to continue his fight before the Committee on Ways and Means in Congress to bring about the establishment of this just rate as a protection to the growing American industry.

The co-operation of the farmer, grainman and miller was asked by macaroni manufacturers to insure purity of durum wheat, which enters chiefly into the manufacture of the product. The shipping of mixed, musty or garlicky wheat from farms to elevators and later to the mills was condemned as a practice detrimental to the best interests of the industry. Legislation was adopted favoring the continuance of experimentations tending to the development of a much higher grade of durum that would surpass even the best quality of this grain grown in small areas of Europe.

Specifications for a container that would insure perfect shipment of macaroni products were given to the manufacturers as a result of a long series of experimentations made by Don L. Quinn, formerly in charge of the box testing and designing department in the Forest Products Laboratory at Madison, Wis., who, during the war drafted the specifications of all boxes used to carry army supplies overseas. This information was considered of great value to macaroni manufacturers, whose shipments have undergone considerable damage when shipped by freight.

The selection of the time and place of the 1922 convention was placed in the hands of the executive committee, which will be guided in this matter by conditions effecting the industry at a time preceding the usual convention period.

C. F. Mueller, Jr., of the C. F. Mueller Company, Jersey City, N. J., was elected president to succeed James T. Williams of the Creamette Company, Minneapolis, Minn., who refused re-election after serving during the past four years. Mr. Williams was tendered a unanimous vote of thanks and appreciation by the convention for the good work he had done for the association, particularly the establishment of the official organ of the industry, owned by the Association and edited by its secretary. B. F. Huestis of the Huron Milling Company, Harbor Beach, Mich., was chosen first vice president; E. Z. Vermylen, of A. Zerega's Sons, Consol., Brooklyn, was chosen second vice president; Fred Becker, of the Pfaffman Egg Noodle Company, Cleveland, was re-elected treasurer, a position he has held since the organization of the association, eighteen years ago. James T. Williams, the retiring president, was elected chairman of the executive committee. His associates will be H. D. Rossi, Peter Rossi & Sons, Braidwood, Ill., and William Tharinger, Tharinger Macaroni Company, Milwaukee, Wis. M. J. Donna, Braidwood, Ill., was re-appointed secretary.

### Dried Banana Samples on Hand

Samples of dried and conserved bananas are on hand at the Bureau of Foreign and Domestic Commerce and are available for examination at the bureau's Washington and New York offices, or may be obtained for examination upon request at any of its district offices, on reference to Exhibit No. 222.

### Baking Powder Sales Highest in Small Communities

Taking exception to a recently published statement that baking powder sales constituted only one-half of one percent of the total sales of staple food items in a large city store, the Calumet Baking Powder Company, Chicago, has conducted an investigation among some of the large wholesale houses. The conclusion reached is that the above-mentioned percentage may be correct as regards sales in some of the stores in the larger cities, particularly in localities where most of the people are apartment house dwellers and to a minimum of home baking. However, as the size of the cities or town diminishes the proportionate sales of baking powder increase.

One correspondent, a California wholesale grocer, writes to the Calumet company in reply to its inquiry as follows:

"It is the writer's judgment that the merchant always has in stock a larger quantity of soap in proportion to anything else in his store, followed by a second largest quantity of baking powder; nevertheless, his sales on the same are in an entirely different proportion to the sales of another stock.

"While the writer cannot submit any figures based on the actual tabulations of sales due to his inability to find any stores in this locality which have a systematic record, permit me to say that in my sixteen years' experience around grocery stores, I am satisfied that the annual sales of baking powder do not exceed five percent of the total sales, and in many cases, in cities, will only run about what you show in this list, that is, one-half of one percent. To balance this, however, there are some country stores in which baking powder sales will amount to from ten to twelve percent of the total, but these are in districts where the population is not served by bakeries."

### C. Von Allmen Preserving Company Reorganizes

The C. Von Allmen Preserving Company, Louisville, Ky., has been reorganized for greater operation, and will add pickles, kraut and table condiments to its line of preserves, jams, jellies and apple butter.

L. A. Herrmann, formerly assistant general manager with the Lippincott Company, Cincinnati, and Walter J. Neville, until recently connected with Knadler and Lucas of Louisville, as president and general manager, have become actively engaged in the new organization.

Extensive improvements are now under way and will be completed in a short time, enabling the company to take care of the increased volume of business expected.

### Cite Benefit of Export Trade Act

According to statistical reports filed with the Federal Trade Commission, American food exporters as well as exporters of other commodities, have benefited by the Export Trade Act. Milk, meat and other foodstuffs totaled in value approximately \$8,000,000 and were shipped to Great Britain, Europe, China, Cuba, Mexico and Central America, in 1920, by associations operating under this act.



# Federal Trade Commission Report on Conditions in Milk and Milk Products Industry

United States Senate, at Its Own Request, Furnished With Facts and Figures Covering Period of World War

Responding to a resolution of the United States Senate the Federal Trade Commission has delivered to that body an exhaustive report on milk and milk products in the United States during the World War. A great deal of the ground of the investigation is covered in the letter of submittal of the Commission, which is printed in its entirety:

Sir: There is submitted herewith a report on milk and milk products in the United States during the World War in response to a resolution of the Senate.

The unusual conditions growing out of the war affected almost every aspect of the milk and milk-products industries. Increasing European demand caused the prices of canned milk to advance, thereby affecting costs and prices of raw milk and of other milk products. Demand for raw milk was thus the cause of the principal competitive difficulties during this period and at the same time a large factor in advancing prices of milk, butter and cheese.

While average prices for raw milk paid the producer by market-milk distributors appear to have been higher than those paid by any other class of purchasers, prices paid by canned-milk manufacturers had from the beginning of 1914 up to the close of 1917 advanced relatively more than those paid by either market-milk distributors or butter manufacturers, and also more than those paid by market-milk distributors up to the close of 1918. In 1918 the average advance over the 1914 price paid the producer of milk by market-milk distributors was 74 percent, by canned-milk manufacturers 76 percent, and by butter manufacturers 80 percent.

The canned-milk industry showed a very great development during this period, the production increasing from 660,000,000 pounds in 1914 to 1,532,000,000 pounds in 1918. The investment in the business doubled during this period, but this was partly a reflection of the advance in prices which affected all liquid assets. A large part of the increase in assets was provided by the employment of credit.

Average production costs of evaporated milk advanced 77 percent in the five years, this advance being due principally to the increase in raw milk and package costs, which together constitute 80 percent or more of the total production costs. The greatest advance in evaporated-milk costs took place in 1917 and 1918. In the latter year these costs were \$4.97 per case of "talls." Production costs of condensed milk were for 1918 about 25 percent higher than for evaporated milk, the higher costs being due chiefly to the use of sugar in condensed milk. Production costs of evaporated milk were found to be lowest among companies with a medium volume of production. A grouping of companies according to locality shows lowest costs for the far western and highest for the eastern groups, differences

in raw milk costs being the principal factor.

Rates of return on investment were computed for the period 1914-1918 for canned-milk companies representing more than 75 percent of total production (evaporated and condensed). These profits include returns on sales of other products. Such sales, however, do not in the aggregate amount to more than 11 percent of total sales. In the year of the lowest rate of profit, 1918, these companies earned on the average, excluding returns from securities, 10.6 percent on capital, surplus, and borrowed funds, or 12.5 percent on capital and surplus, and in the year of the highest rate of profit, 1917, 27.7 percent on capital, surplus, and borrowed funds, or 36 percent on capital and surplus. Evaporated-milk companies, while earning for the period as a whole a higher rate of profit than condensed-milk companies or companies combining the manufacture of both evaporated and condensed, were subject to more violent fluctuations in rates of return.

Marked concentration of control exists in the manufacture of canned milk. In 1914 three companies produced 56.5 percent of the total output of the country, and in 1918 four companies 54.2 percent. Moreover, the two companies ranking highest in production in 1918—the Borden Company and the Nestle & Anglo-Swiss Condensed Milk Company—were, throughout much of the war period, taking under contract immense quantities of the output of smaller companies. Furthermore, these two largest interests—Borden and Nestle, have long agreements seemingly restrictive of competition and apparently open to question under the anti-trust acts.

Creamery butter is produced in two types of plants—"centralizers," securing cream from large territories, and "locals" (including co-operative companies), relying wholly on supplies from the vicinity. The production of creamery butter has increased from about 770,000,000 pounds in 1914 to 874,000,000 pounds in 1919.

Centralizers' costs increased from 27 cents per pound of butter in 1914 to 48 cents in 1918. Approximately 90 percent of this manufacturing cost was for cream (butter-fat) and its collection. No butter-fat cost for co-operatives could, of course, be shown because the return to the members of the co-operatives is factoring costs (exclusive of butter-fat) from the price of the butter. Nor could collection cost be shown, since members of cooperatives usually provide for hauling their cream to the factory. Total costs of co-operatives, which do not include butter-fat costs, advanced from 2.37 cents per pound of butter in 1914 to 3.16 cents in 1918, while the total costs for centralizers on the items making up the total of co-operatives' cost advanced from 3.65 to 4.95 cents. Comparison of the price received for butter fat by the

patron of the centralizer with the realization left for the member of the co-operative, found by deducting the cost of manufacturing (exclusive of butter fat) from the price received for the butter, shows a cash return for the member of the co-operative over the price received for butter fat by the patron of the centralizer in each year of the five-year period, ranging from 2.94 cents per pound of butter in 1917 to 4.61 cents in 1914. This apparent advantage of co-operative members, however, is less than appears, since the co-operatives' realization includes a return not only for butter fat but also for the members' share of the investment in butter factory and equipment and for hauling their own cream to the factory.

While costs of centralizers, from 1914 to 1918, advanced 79 percent, prices advanced only 74 percent, and profits per pound of butter declined 25 percent. Rate of profit on combined capital stock and surplus (securities held by the company deducted) was for 1915, the year of the lowest rate of profit, 11.3 percent, and for 1918, the year of the highest rate of profit, 22.2 percent. The rate of profit similarly computed for centralizers who did a butter business comprising 90 percent or more of the total was for 1915, the year of the lowest rate of profit, 19.5 percent, and for 1914, the year of the highest rate of profit, 31.7 percent.

Questionable practices in the buying and handling of cream by butter manufacturers were disclosed by the inquiry, many of which have since been declared to be unfair by the trade itself. Some of the practices thus declared to be unfair are false testing of cream, unauthorized use of competitor's equipment, false advertising, price discrimination, the payment of more than established commissions, and the furnishing of cans without charge to producers.

For market milk the data obtained as to general conditions are not comprehensive, but they are apparently fairly typical. For market-milk distributors, the highest rate of profit earned on capital stock and surplus in the five-year period was 13.3 percent, in 1914. The rate declined in each succeeding year, until in 1917 the lowest rate was earned, 7.6 percent on capital stock and surplus. Cost increased throughout the five-year period, and not until 1918 did distributors' prices increase sufficiently to take care of approximately the increase in costs. In that year the rate of return on capital stock and surplus advanced 13.1 percent.

Price fixing in the milk and milk-products industries was studiously avoided by the United States Food Administration. Margins and profits, however, were required to be reasonable under the licenses issued, and in some cases maximum margins were specifically set. Control of exports of canned milk was exercised by the Food Administration through licenses by the War Trade Board. Some of the Food Administration officials concerned with matters affecting milk products were connected with the milk-products industry, but they had no voice in deciding whether the industry should be called on to reserve supplies for the Government or what prices should be recommended as reasonable to the purchasing departments of the Government.

The unfair trade practices in the pur-



chase of cream which the investigation disclosed are being eliminated by the Commission in co-operation with the trade.

Respectfully,

HUSTON THOMPSON, Chairman.  
NELSON B. GASKILL,  
JOHN GARLAND POLLARD,  
VICTOR MURDOCK,  
JOHN F. NUGENT.

The Commission in its investigations covered raw milk, the canned milk industry and the butter industry. Concerning the recent development, the report reads:

The most striking feature of the milk and milk-products industries from 1914 to 1918 was the remarkable increase in canned-milk production, which increased from 660,000,000 to more than 1,500,000,000 pounds. In contrast to this great increase the total butter production (farm and creamery) declined slightly from 1,615,000,000 to 1,533,000,000 pounds, and the total cheese production increased only from 370,000,000 to 385,000,000 pounds. Canned milk, however, uses much smaller quantities of the raw milk than does butter. In 1918, while butter production approximately equaled in pounds canned-milk production, almost 37 percent of the total raw-milk production of the country went into the manufacture of butter and less than 5 percent into the manufacture of canned milk. About 4 percent was used in the making of cheese.

Figures are not available to show so clearly the relative growth in the market-milk industry and the competition which this industry encountered in the purchase of milk. Formerly, before the large cities, such as New York, Philadelphia and Chicago, began securing their fresh milk from such an extensive territory as at present, the cheese and butter industries were well developed in the States in their immediate vicinity. This development, however, was more latterly checked by the competition of the market-milk distributors, and such States as Wisconsin, Minnesota and Iowa became more important milk-product States than those in the neighborhood of the larger cities. During the years 1914-1918, however, the demand for milk products, particularly for canned milk, apparently resulted in a decreasing proportion of fresh milk being supplied to market-milk distributors in at least some localities.

#### Raw-Milk Prices

The average price per 100 pounds of milk paid the farmer by market-milk distributors (based on such data as were available to the Commission) showed a consistent increase from \$1.92 in 1914 to \$3.34 in 1918. These prices were higher in every year than those paid by any other class of purchasers. The average price paid the farmer by 77 condensers reporting to the Commission rose from \$1.61 in 1914 to \$2.84 in 1918. The butter-fat content in the milk purchased by these condensers ranged from 3 percent to 4.89 percent. The average price per 100 pounds of cream paid by butter manufacturers reporting to the Commission was in 1914, \$9.74; in 1915, \$9.61; in 1916, \$11.23; in 1917, \$14.66; and in 1918, \$17.54. The cream averaged approximately 33 1-3 percent butter fat.

The above are average prices paid by purchasers in all localities from which the Commission secured data. There

were, of course, important variations from these averages in particular localities. In New York and Illinois, for example, where the demand for market milk is high, market-milk distributors paid considerably more than condensers in every year, but in Wisconsin, where there is relatively little demand for market milk, the condensers paid more in every year except 1918.

The change (for the most part advance) in prices paid the producer for milk through the years 1914-1918 was by no means uniform for the different classes of purchasers. In 1915 market-milk distributors were paying 1 percent more than in 1914, butter manufacturers 1 percent less, and canned-milk manufacturers 7 percent less. In 1916 market-milk distributors and canned-milk manufacturers were paying 5 percent more than in 1914 and butter manufacturers 15 percent more. In 1917 prices paid to farmers by market-milk distributors had advanced over 1914 about 43 percent; prices paid by canned-milk manufacturers had advanced 57 percent; and by butter manufacturers 51 percent. In 1918 the advance over 1914 for these three classes ranged from 74 to 80 percent.

#### Costs of Distributing Market Milk

Detailed costs of the distribution of market milk were not secured by the Commission directly from dealers. Certain cost data, however, compiled for various cities by public authorities, are presented in the report. Distributing costs (not including cost of milk) for Rochester, N. Y., in 1912 were estimated at 1.9 cents per quart. These costs in order of size (the largest first) were maintenance of equipment, labor, bottles, interest and depreciation, coal and ice, and shrinkage of milk. The cost of the milk was 4.6 cents per quart, giving a total cost to the distributor of 6.5 cents. Receiving an average price of 7.8 cents per quart, the distributor earned a profit (including a return for the labor of the proprietor) of 1.3 cents per quart, or about 17 percent on sales.

A similar investigation for the same city in 1919, which, however, does not show distributors' costs of milk, receipts, or profits, found a total distributing cost of 5.8 cents per quart, an advance of 200 percent over 1912 costs. An item of freight of considerable importance appeared in the 1919 costs which was not in the 1912 figures, indicating that the milk was being drawn from a more extensive area.

Distributing costs of five large dealers in New York City for 1915 and 1916, secured by a committee of the New York Legislature, total 4.8 cents per quart for grade B, selling at 9 cents during this period. Of these costs delivery amounted to 50 percent and freight to about 20 percent of distributing costs. The cost of the milk was 3.8 cents per quart and the profit four-tenths of a cent, or a little more than 4 percent of the selling price.

#### Profits of Market-Milk Distributors

A committee of the Food Administration made an investigation of costs and profits of market-milk distributors for the six months ended June 30, 1917. This investigation included 46 companies in most of the larger cities and in many smaller ones located in the eastern half of the United States and as far west as

Iowa and Missouri. These companies had assets aggregating almost \$49,000,000 and sales during the six months of over \$41,000,000. The average cost of milk to the distributor was 4.7 cents per quart. Distributing cost averaged 3.4 cents per quart and distributors' average sale price was 8.4 cents per quart. The average net profit per quart was three-tenths of a cent. The average rate of net profits on sales was 3.2 percent and an average rate of return of 5.46 percent per annum was earned on total assets. If these assets included, as they probably did, some investments not devoted to the distribution of milk, this percentage is too low. Moreover, this rate of return is on gross investment, including borrowed funds.

A considerable number of market-milk distributors representing a wide range of territory reported to the Commission 'their investment, sales, total cost of sales, and net earnings for the years 1914-1918. The average rates of return for these firms ranged from as low as 7.3 percent in 1917 on the entire gross investment to as high as 12.3 in 1918. Rates of return on the entire net investment for the corresponding years were respectively 7.6 and 13.1 percent. Rates of return as between individual firms varied widely. For example, in 1918 one firm in Minnesota earned less than 1 percent on net investment, while one in New York earned 52.4 percent. Since investments for the distribution of milk could not be segregated from those for outside lines the above percentages of profits are in some measure too low.

Distributors' prices, of course, as well as costs, were a factor in the variation of profits during the years 1914-1918. Based on general producers' and distributors' market-milk prices (Bureau of Labor Statistics), distributors' margins declined somewhat in 1915, and although higher in 1916 than in 1915 they were yet lower than in 1914. Both producers' and distributors' prices advanced slightly from 1914 to 1916—producers' somewhat more than distributors'. In 1917, when average profits on net investment were for milk distributors, the lowest during the five-year period, prices paid to producers were 43 percent higher than in 1914, but margins had increased only 11 percent. Apparently the increase in margins was not sufficient to cover the increase in distributing costs, and consequently rates of return on investment fell. While margins were only 41 percent higher in 1918 than in 1914, as compared with a rise in producers' prices in the same period of 74 percent, the increase in margins apparently took care of increase in costs, since profits on net investment were almost as high as for 1914, the most profitable year of the five.

There are indications that following the outbreak of the European war down to 1918 manufacturers of canned milk bid up the prices of raw milk in certain sections of the country, thus forcing manufacturers of butter and cheese and distributors of market milk to pay higher prices. This left these three classes of purchasers the alternative of either diminished profits or of advancing prices to the consumer.

Evidences of serious economic wastes in the distribution of market milk, secured by apparently reliable outside investigations, are briefly summarized in



the report. These wastes are principally along the following three lines, and, while not occurring in the same degree in all cities, are more or less general: Duplication of delivery routes and of solicitation of business; inability to use plant, equipment and labor to approximate capacity; uneconomic size of distributing establishment.

#### Investment in Canned-Milk Industry

The most important information obtained by the Commission regarding the canned-milk industry was from the reports of a varying number of companies representing more than 75 percent of the canned-milk production of the United States during the period 1914-1918. These reports showed their investments, production, costs, prices, and profits.

There was a great increase in the investment in this industry during the five-year period under examination. The assets of canned-milk companies included in the survey more than doubled, increasing from \$52,000,000 in 1914 to \$108,000,000 in 1918. Good will and other intangible assets, however, declined from \$11,000,000 to \$7,000,000. The great increase in inventories, which rose from \$8,700,000 in 1914 to \$31,400,000 in 1918, was partly due of course to the increases in costs and prices. Cash and receivables increased from \$9,700,000 to \$17,800,000, partly for the same reason, while securities increased from \$2,800,000 to \$25,000,000, largely due to certain operations of the Borden Co., but partly also to the purchase of Liberty bonds during the war. Fixed assets increased only from \$19,000,000 to \$25,600,000.

With the large increases in inventories and other working assets there was a very great increase in current liabilities, which rose from \$4,800,000 in 1914 to \$38,400,000 in 1918. In 1914 current liabilities constituted only 9 percent of total liabilities, but in 1918 this item amounted to 36 percent of all liabilities. On the other hand, capital stock and surplus, which constituted 91 percent of total liabilities in the first year, amounted to but 64 percent of the total in the last. Thus while about one-tenth of the capital (total liabilities) employed by the industry was in credit form in 1914, more than one-third of it was of this character in 1918. Only a small proportion of the liabilities was in bonds and mortgages. Though the industry considerably expanded to meet war requirements, this expansion was more largely through open accounts and the issue of notes than through the investment of earnings or through the sale of stock or bonds. The largest increase in the investment through earnings occurred in 1917, which was a very profitable year in the manufacture of canned milk.

#### Profits of Canned-Milk Industry

Prices per case of "talls" for such of the companies as furnished total costs and selling prices ranged from \$5.59 in 1918. The average total cost on a case of "talls" for these companies was \$5.10 and the average price on sales, exclusive of those made to the Government, was \$5.031, showing a loss of \$0.69 per case. About half of these companies showed a loss in this year on such sales. Large sales to the Army and Navy were not included in this calculation of profit and loss, since reported prices for such sales were tentative,

pending final settlement with the Government. While rising costs and practically stationary prices of the product were largely responsible for the 1918 results, other factors may have contributed to the above showing, which is based on a current production cost. In a period of rising costs, the calculation of profits on current manufacturing and selling costs does not for inventories, and may not for purchases, show the full profits actually made.

Profits calculated as a percentage on investment were computed for each of the five years (1914-1918). These include returns on all processed milk (evaporated, condensed, and dry) sales (including sales to the Government) and also on sales of other products which, however, amounted in the aggregate to only about 11 percent of the total in 1918. The average rate of return for companies reporting to the Commission representing more than 75 percent of the total production was lowest in 1918, namely, 10.6 percent on gross investment employed in the business (excluding securities, but including borrowed capital) and 12.5 percent (the same, however, as in 1915) on net investment employed in the business (excluding both securities and borrowed capital). Net profits were highest in 1917, when the return on said gross investment was 27.7 percent and on said net investment 36 percent. In 1917, the year of largest profits, the average price of evaporated milk ("talls") was 10.3 cents per pound, which was slightly lower than the average price of 10.9 cents realized in 1918, the year of lowest profits during the five-year period.

The most profitable canned-milk companies appear to be those having a medium volume of sales. Those companies whose sales ranged from \$1,000,000 to \$5,000,000 earned a rate throughout the five-year period considerably higher than that earned by companies having a larger volume of sales and very much higher than that earned by companies having smaller sales. Companies having sales above \$5,000,000 ranked second in rate of return on gross investment, companies having sales from \$250,000 to \$1,000,000 ranked third, and companies having sales below \$250,000 ranked fourth.

Evaporated-milk companies, while earning for the period as a whole a higher rate of profit than condensed-milk companies or companies combining the manufacture of both evaporated and condensed, were subject to more violent fluctuations, the rate of return falling in some years far below the rate of either of the other groups. Companies making condensed milk alone earned a higher rate than those manufacturing both evaporated and condensed milk. Condensed-milk companies were the most profitable of the three groups in 1915 and 1918, while the evaporated-milk companies were the most profitable in the other three years of the period. The greater profitableness of the evaporated group when compared with the other groups is striking. It appears that those companies which specialize, particularly the evaporated-milk companies, were subject to much wider variation in profits year by year than the companies which did not specialize in either kind of canned milk. A steady average rate of from 10 to 14 percent on the entire gross investment was main-

maintained by the latter group throughout the period.

The profit of the evaporated-milk manufacturers decreased from 43.9 percent on the entire gross investment in 1917 to 4.1 percent in 1918, whereas, the profit of the condensed-milk manufacturers decreased from 19.8 percent in 1917 to 13.1 percent in 1918.

A classification of canned-milk companies into four groups according to location was made, i. e., far western, middle western, eastern, and unlocalized (those with plants widely scattered). The last of these four groups was by far the most important in production and sales. In 1918, for example, its sales were more than twice the combined sales of the other three groups. The far western companies were much more profitable in 1917 and particularly in 1918 than were the companies of the other groups. In 1918 the rate of return on the entire gross investment was for this group 20.5 percent as against 3.7 percent for the middle western, 3.4 percent for the eastern, and 9.5 percent for the unlocalized. In 1915 and the middle western group was the most profitable, while in 1914 the far western was first, followed by the middle western, the unlocalized, and the eastern. The few eastern companies for which returns could be tabulated showed losses in both 1914 and 1915. Apparently these differences in profits were largely caused by differences in the prices of raw milk. The profits of unlocalized companies showed less fluctuation than the profits of localized companies.

#### Investment in Butter Industry

Creamery butter is produced in two types of plants—"centralizers," securing cream from large areas, and "locals," relying wholly on supplies from the vicinity. Locals may be operated by individuals or small companies. In the latter case they are usually co-operative companies, and in fact much of the "local" production is by co-operatives.

Consolidated balance sheets were secured by the Commission for 25 centralizing companies running through the five years, 1914-1918, and representing in 1914 about 14 percent of the total United States production of creamery butter. The number of companies for which reports were received increased each year, and in 1918 amounted to 40, with about 24 percent of the total production. The total assets of the 25 companies amounted to \$19,000,000 in 1914 and of the 40 companies to \$41,000,000 in 1918. The percentage of securities to total assets increased during this period from 4 percent in 1914 to 13 percent in 1918, and good will from less than 1 percent to about 5 percent, while fixed assets declined from 51 to 36 percent. The proportion of capital stock and surplus to total liabilities declined from 81 to 70 percent in the same period.

Consolidated balance sheets were also obtained from 38 co-operatives for the five-year period, representing in 1914 1 percent of the total creamery-butter production. For 1918 the number of reporting companies was 73, representing a production of about 2 percent of the total creamery butter of the country. The total assets of the 38 companies amounted to \$334,000 in 1914 and of the 73 companies to \$968,000 in 1918. No good will was shown among the assets, and the proportion of fixed to total as-



sets was higher than for centralizers. The percentage of surplus to total liabilities increased from 5 to 22 percent in the five years, 1914-1918, indicating growing stability in the co-operative reporting.

#### Butter Costs

Detailed costs for the years 1914-1918 were secured by the Commission from centralizers representing from approximately 9 percent of the total creamery production in 1914 to 22 percent in 1918. Total costs increased during the five years from 27 cents per pound of butter to 48 cents. Butter-fat cost (including collection cost), constituting about 90 percent of the total cost, almost doubled in the period, increasing from about 23 cents per pound of butter in 1914 to 43 cents in 1918. Approximately 3 cents per pound of this item was for collection. No other item of cost increased so greatly as butter fat.

Analysis of costs by sections of the country shows a lower total cost in every year for the west central section as compared with western and east central sections, due chiefly to lower butter-fat and labor costs. The east central had the lowest administrative cost, except in 1915, and the western the lowest package cost. The low butter-fat cost of the west central section appears to be due to the relatively little competition from producers of cheese and canned milk.

No butter-fat (including collection) for co-operatives could, of course, be shown. Selling costs were practically negligible and are included under administrative costs. Total costs (exclusive of butter fat and its collection cost) advanced from 2.37 cents per pound of butter in 1914 to 3.16 cents in 1918. Centralizers' costs (exclusive of butter-fat and its collection cost) advanced in the same period from 3.65 cents to 4.95 cents. Co-operatives' costs, while higher for labor, were for most of the years lower on all other items than centralizers' costs.

#### Profits of the Butter Industry

The lower total costs of co-operatives, however, are not conclusive as to their greater manufacturing and selling efficiency as compared with the centralizers. A comparison should also be made of the prices paid producers by centralizers for butter fat with the realization or compensation left for the members of the co-operative creamery found by deducting from the price of the butter the cost of manufacturing, which in the case of this type of organization, as previously explained, includes no cost for butter fat. Such a comparison shows a net cash realization for the member of the co-operative over the price paid for butter fat to the patron of the centralizer in each year of the five-year period, ranging from 2.94 cents per pound of butter in 1917 to 4.61 cents in 1914. Even this comparison is not entirely adequate. The co-operative sells the butter and returns to the co-operative farmer on the basis of the quantity of cream (butter fat furnished, the average proceeds per pound of butter fat, less actual operating expenses of butter making. This return constitutes the farmer's compensation, for both cream supply and his interest in the butter-making operation. The realization of the members of the co-operative, therefore, is not for butter fat alone, but includes a return on the

plant investment of the co-operative, which if computed at market rates of interest would reduce the apparent advantage which the member of the co-operative has over the patron of the centralizer. Furthermore, centralizers depending upon competitive conditions and other factors collect in some instances their patron's cream. Since co-operatives so far as ascertained furnish no collection service for their members, the apparent advantage accruing to such members over the patrons of centralizers may be still further reduced.

Butter prices of jobbers increased in the five-year period 72 percent; those of retailers 59 percent. Prices of centralizers who reported to the Commission both prices and costs advanced 74 percent, while costs advanced 79 percent. Profits per pound declined 25 percent and percentage of profit on sales of current production (disregarding inventories) declined from about 5 percent to about 2 percent.

Many of the centralizing companies reporting to the Commission were producing or handling products other than butter and were unable to allocate their investment to the different products. For such companies representing from 9 percent of the total creamery production in the United States in 1914 to 22 percent in 1918, the rate of return on gross investment employed in the business (including borrowed funds but excluding securities) ranged from 10.3 percent in 1915 to 19.1 percent in 1918. Based on net investment (excluding borrowed funds and securities) profits ranged from 11.3 percent in 1915 to 22.2 percent in 1918.

Certain companies included among those for which the foregoing percentages of profits are given did chiefly a butter business, comprising 90 percent or more of their total business. The average rate of return on the gross investment employed in the business for these companies ranged from 17.9 percent in 1918 to 31 percent in 1914 and on net investment from 19.5 percent in 1915 to 31.7 percent in 1914. Although the year 1914 was comparatively unprofitable for butter manufacturers as a whole, it was exceptionally profitable for the 90 percent butter companies.

#### Unfair Practices

The investigation disclosed the prevalence of a number of questionable practices in the buying and handling of cream for the manufacture of butter. In a trade practice submittal held by the Commission at Omaha, Neb., November 3, 1919, many of these were declared by the trade itself to be unfair or bad practice. Practices so described include the following: Enticement of employees with the purpose and effect of appropriating values created by or belonging to competitors; false testing of cream; unauthorized use of competitors' equipment; furnishing of equipment without charge therefor as an inducement to appropriating competitors' patronage; defamation of competitors; employment of agents of common carriers for the purpose of soliciting or influencing shipments; espionage; false advertising; price discrimination; the payment of more than established commissions; free gifts or premiums; adjustments in the sale of butter on one-half pound instead of one-pound basis; and the furnishing of cans without charge to producers.

#### Nation's Exports of Vegetable Oils Exceeds Imports

The exports of vegetable oils from the United States during the first three months of 1921 have exceeded the imports by nearly 85,000,000 pounds, the imports having totaled about 67,750,000 pounds, while the exports reached 152,550,000 pounds. This is the first time since 1915 that the exports have exceeded the imports. Prior to the outbreak of the war, however, this country was an exporter of such oils.

The trade was unsettled at the outbreak of the war and in 1914 the imports exceeded the exports by about 105,000,000 pounds. The pendulum swung back the following year, though not quite to the same degree. In 1916, however, the trade began a steady development toward large imports in excess of exports. This condition prevailed until the latter part of October, 1920, when the general price level began to fall and importers ceased further purchasing. In November, 1920, the exports exceeded the imports by 9,000,000 pounds; increasing to an excess of nearly 52,000,000 pounds in January, 1921. At the present rate the excess of exports will amount to more in 1921 than in 1913.

In 1918 the imports were larger than in any previous year and exceeded the exports by 634,937,000 pounds. The trend of the trade is well illustrated by the chart accompanying this article, which includes all vegetable oils listed separately by quantities in the reports of the Department of Commerce. The figures presented by the chart, however, do not include lard and butter substitutes manufactured chiefly from vegetable oils.

The import trade of the United States is made up chiefly of coconut, soy-bean, peanut, and palm oils. Coconut oil imports increased from 15 percent of our total imports in 1910 to 34 percent in 1920, and for the first three months of 1921 they have amounted to 66 percent of our total imports of vegetable oil. For the past three years more than 70 percent of the coconut oil imported into the United States came from the Philippine Islands. Peanut, soy-bean, and Chinese nut oils are the next in importance in the order named. The United States receives practically its entire supply of these oils from China and Japan.

#### Meat Selling at Low Prices

The current period of excessively warm weather has affected meat prices. Not in years have forequarters of beef been selling so cheaply as at present, according to a statement issued today by the Institute of American Meat Packers. The statement says:

"Whole forequarters of excellent quality beef now are selling at wholesale at Chicago for 5 to 8 cents a pound, and in some cases even less. Even at such relatively low prices, the demand for forequarters and forequarter cuts is relatively limited. This situation is not local but countrywide. Navel ends, which can be used for a variety of dishes—pot roast and soup, for instance—are selling at wholesale for from 2 to 4 cents a pound and chucks from 4 to 8 cents a pound. The chuck, which is a shoulder cut, has high value as a solid meat and is suitable for pot roasts, stews, casserole dishes and spiced beef. It is economical meat, not only because of its very low price but also because it consists of about two-thirds lean meat, one-fifth fat, and only from one-quarter to one-eighth bone. It has an excellent flavor and may be cooked in a variety of ways."



# Milk Production in 1920 About 90,000,000 Pounds

## Annual Statement Shows Output to Be Nearly That of 1919—Utilization of Milk Also Shown

The total production of milk in the United States for 1920 is estimated at 89,658,000,000 lbs. in the annual statement compiled by the Bureau of Markets and the Bureau of Animal Industry, U. S. Department of Agriculture. This amount is practically the same as for 1919, the production for that year having been placed at 90,057,500,000 lbs. The production of milk was decreased from 100 gals. per capita in 1919 to 98 gals. (848 lbs.) in 1920. There was a decrease in the number of milk cows in the country during the year. According to the Bureau of Crop Estimates, there were on farms 23,619,000 milk cows on Jan. 1, 1920, and 23,321,000 on Jan. 1, 1921, a decrease of 298,000. The number of cows other than on farms was estimated as 1,400,000 for 1919, but for the year 1920 the number was prorated from census figures as 1,200,000.

### Per Capita Consumption

The consumption of fluid milk fluctuated during 1920. In the first part of the season there was an abundance of milk and the consumption was larger than that of previous years. However, during the period of industrial depression that marked the closing days of 1920, milk consumption rapidly decreased, though this decrease was partly offset by the milk campaigns carried on throughout the country and which greatly increased the consumption in the territory covered. The estimate of the population of the United States as used in the annual statement covering 1919 was too high, as shown by the returns of the late census. But when the quantity of milk used for household purposes in 1919 is

divided by the correct population figure the consumption of milk for 1920 is shown to be the same as for 1919, i. e., 43 gals. per person.

The amount of milk used in the manufacture of oleomargarine was estimated this year from data received from the factories and shows a decrease in the proportional amount of whole milk used. The quantity of milk and skimmed milk combined, as now used, is practically equal to the quantity of whole milk formerly used. However, in the manufacture of nut margarin, whole milk is not used in the same proportion as in the regular oleomargarine

This year original data was received from the factories relative to the quantities of milk used in the manufacture of milk chocolate and, while complete reports were not received, the quantity shown in the table was prorated from these reports and is very conservative.

The production figures for ice cream are estimates. The figures for 1920 show an increase in production of 13 percent over 1919 based on factory reports received by the U. S. Bureau of Markets. Calculations were made on the basis of 13.75 lbs. of milk per gallon of ice cream for 1920 and 15 lbs. for 1919. The latter figure was based on the "batch" method of manufacture only. Ice cream made by the continuous machines weighs less per gallon. The quantity made by the continuous method was large enough to warrant the use of 13.75 lbs. per gal. for the year 1920.

The total calf crop for 1919 was estimated at 80 percent of the number of cows.

Data compiled more recently from a number of representative States indicate that the estimate was too low and that the calf crop was 90 percent of the total number of milk cows. The number of calves slaughtered at birth, and the number vealed are estimated from data obtained from the principal markets, census reports, and reports of the U. S. Bureau of Markets.

In comparison of the figures for 1920 and 1919 a decrease is noted in the quantities of milk used in the manufacture of butter, cheese, condensed milk, powdered cream, and oleomargarine. An increase is shown in the quantity used for whole milk powder, malted milk, sterilized milk, ice cream, and household purposes.

## Exports Demand for Meats Show a Gain

Exports of meats and meat products during June showed a decided improvement, as was foreshadowed by the May review of the Institute of American Meat Packers. Foreign trading, which during May had been confined to purchases from spot stocks already abroad, expanded in June into orders for shipment from the United States, England, Holland and Belgium, all exhibiting a great desire for American pork.

There was a vigorous revival of trade with the United Kingdom. British buyers were active not only in the spot market but, when spot stocks proved inadequate, in the contract market as well.

Prior to June, traders in England were deterred by the labor situation there. Near the end of May and at the beginning of June, American packers received messages from their English representatives urging that shipments, already light, be reduced greatly. For a while, little or nothing was shipped to the United Kingdom.

## PRODUCTION AND USES OF MILK IN THE UNITED STATES, 1920 AND 1919

Product	Milk used per unit of product	1920			1919		
		Quantity of product manufactured	Total whole milk used	Percent of total milk	Quantity of product manufactured	Percent of total milk	Total whole milk used
	Pounds		Pounds			Pounds	
Creamery butter .....	21	863,577,000	18,135,117,000	20.226	875,000,000	18,375,000,000	20.404
Farm butter .....	21	675,000,000	14,175,000,000	15.810	685,000,000	14,385,000,000	15.973
Cheese (all kinds).....	10	2362,431,000	3,624,310,000	4.042	420,000,000	4,200,000,000	4.664
Condensed and evaporated milk	2.5	1,578,015,000	3,945,038,000	4.400	1,925,000,000	4,813,000,000	5.344
Powdered milk .....	8	10,334,000	82,672,000	.092	9,000,000	72,000,000	.080
Powdered cream .....	19	309,000	5,871,000	.007	670,000	12,000,000	.013
Malted milk .....	2.2	19,715,000	43,373,000	.048	18,000,000	40,000,000	.045
Sterilized milk (canned).....	1	5,623,000	5,623,000	.006	4,500,000	4,500,000	.005
Oleomargarine (all kinds).....	3.065	370,162,925	24,256,000	.027	371,320,000	87,000,000	.097
Milk chocolate .....		( <sup>4</sup> )	60,000,000	.067	.....	.....	.....
Ice cream, gallons.....	<sup>2</sup> 13.75	<sup>2</sup> 260,000,000	3,575,000,000	3.987	230,000,000	3,450,000,000	3.831
Total milk used in manufacturing .....		.....	43,676,260,000	48.712	.....	46,439,000,000	50.456
	Per capita	People			Per Capita		
Household purposes .....	<sup>7</sup> 43	105,708,770	39,090,000,000	43.599	<sup>8</sup> 43	38,619,000,000	42.882
		Calves					
Fed to calves.....	<sup>9</sup> 200	<sup>10</sup> 21,012,000	4,202,000,000	4.687	<sup>9</sup> 200	3,500,000,000	3.886
Waste, loss, etc.....		.....	2,689,000,000	3.000	.....	2,500,000,000	2.776
Grand total .....		.....	89,658,000,000	100.000	.....	90,057,500,000	100.000

<sup>1</sup> Figures for manufactured products for both years are from reports to the U. S. Bureau of Markets; other figures are estimates based on surveys, etc.

<sup>2</sup> Including 6,300,000 lbs. of farm cheese.

<sup>3</sup> A large proportion of skim milk is also used. The figure used in 1919 (0.23 lbs.) included some of this.

<sup>4</sup> A large part was made from milk powder, condensed milk, etc.

<sup>5</sup> Batch-made ice cream weighs 6 lbs. per gal., and continuous machine made ice cream weighs 5 lbs per gal., averaging 13.75 lbs of milk to make, rather than 15 lbs. as calculated for 1919.

<sup>6</sup> Reports show 10 percent increase over 1919.

<sup>7</sup> Gallons.

<sup>8</sup> Population in the 1919 statement was estimated at 106,700,000.

<sup>9</sup> Pounds.

<sup>10</sup> Figuring 5 percent slaughtered at once, and 85 percent fed. Calf crop 90 percent of cows.





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Wins and Holds Trade on account of its  
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Lowerator saves wages and upkeep. Takes goods to shipping platform from any floor. Goods unload themselves. No banging, racking or breakage as in spiral chutes.

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## Michigan Wholesale Grocers Meet

The annual convention of the Michigan Wholesale Grocers' Association was held in Detroit during the last week of June, and reflected a good deal of enthusiasm and optimism. Officers were elected and a number of resolutions drawn up reflecting the attitude of the wholesalers upon current problems which affect them and their business.

The following officers were elected: President, Henry T. Stanton; vice presidents, John T. Woodhouse, F. W. Atkins, W. S. Cooke and F. I. Holmes; executive committee, John G. Clark, Fred F. Fox, T. J. Marsden, Howard Musselman, R. J. Prendergast, Rudolph Otto, A. A. Albertson, W. R. Spencer and Henry Mazer.

The following resolutions were adopted:

Favoring the drawing by manufacturers of drop shipments from jobbers' stocks because of the economy over L. C. L. factory shipments.

Favoring having all manufacturers who sell goods on delivery basis prepay all freight charges.

Favoring uniformity in food laws between State and Federal jurisdictions and on the basis of the Federal Food and Drug Act.

Urging wholesale grocers to promote readjustment in values as speedily as possible, urging the continuance of price decline as rapidly as the market justifies; commending those retail grocers who decrease their selling price in keeping with wholesale price decreases and urging those who do not to adopt the practice on the basis that any other policy is detrimental, and urging all members to readjust business expenses in keeping with present shop curtailments.

## Seize Apple Butter Government Had Sold

An unusual situation came to light recently when Federal authorities seized fourteen hundred and thirty-seven pails of apple butter which the Government sold to J. Gold, 710 West Main Street, Louisville, Ky., at the time Camp Taylor was dismantled, and which were later sold to H. Davis & Company of Louisville.

Orders for the seizure, which came from the Department of Agriculture, state that the apple butter consists wholly or in part of decomposed vegetable substance, and that there is further violation of the Food and Drug Act in that the packages were misbranded and were short in weight.

Authorities claim the apple butter, which is labeled "Priscilla Brand," was sold to the War Department in July, 1920, and was shipped to Camp Taylor. When the camp was discontinued the foodstuff was sold at auction by the Government and was bid in by J. Gold, who later sold it to H. Davis & Co. Two hundred and forty-three pails were seized at the Merchants' Cold Storage Company, and 1,194 were seized at the National Storage and Moving Company, where it had been placed by the owners.

R. J. McDonald, secretary-treasurer of the Georgia Wholesale Grocers' Association has tendered his resignation to be submitted to the next quarterly meeting of that organization, to be held in Macon, July 14.

## Former Dairy Chief Receives Praise

B. H. Rawl, who recently resigned as assistant chief of the Bureau of Animal Industry, Department of Agriculture, to take charge of the educational work of the California Central creameries, has received a letter from Secretary Wallace, regretfully accepting his resignation, and praising highly the work he accomplished while in office, the Secretary stating that the department could ill afford to lose men who were capable of doing the sort of work that Mr. Rawl accounted for.

## Recent Patents

The following patents of interest to readers of THE AMERICAN FOOD JOURNAL recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Continental Trust Building, Washington, D. C., at the rate of 20 cents each. State number of patent and name of inventor when ordering.

1,378,662. Machine for making macaroni. Antonio di Domencia, Philadelphia.

1,378,762. Cream- whip composition. Arthur W. Bull, Haverford, Pa.

1,379,080. Stop mechanism for pastry making machines. Frederick A. Bruckman, Portland, Ore.

1,379,294. Preparation of media for yeast propagation and fermentation. Robert Wahl, Chicago.

1,379,643. Pastry-making machine. Julius B. Meltz, Everett, Mass., assignor to Everett Machine & Manufacturing Company, same place.

1,379,987. Pastry-shaping device. Isaac Israel, New York.

1,380,068. Art of curing meat. Frederick W. Kurk, Chicago, assignor to Wilson & Company, same place.

1,380,069. Art of curing meat. Frederick W. Kurk, Chicago, assignor to Wilson & Company, same place.

1,380,070. Art of curing meat. Frederick W. Kurk, Chicago, assignor to Wilson & Company, same place.

1,380,230. Apparatus for the treatment of milk. John M. Manley, Montgomery, Ala.

## San Ignacio, Lower California, Date Growing Center

The center of date culture in lower California, is San Ignacio, a town of some 700 inhabitants and is situated at the center of the peninsular. It may be reached from San Ignacio Lagoon, forty miles away on the Pacific, or from Santa Rosalia, a port on the Gulf of California, sixty-six miles away.

Dates from San Ignacio are marketed exclusively in Mexico, since they are not dried or packed in a manner that would be pleasing to American tastes. The local price ranges around 2 cents gold per pound. Since these dates are of a superior quality, it is likely that if handled by modern methods and put out in attractive containers they would find a ready market in the United States. Date brandy and date preserves are by-products. The brandy finds a ready market in Lower California, and the preserves are consumed locally. In 1920 Swiss and German interests installed a drying oven but the experiment was not a success.

## South Texas Wholesale Grocers Meet

The South Texas Wholesale Grocers' Association recently held a one-day business session in Galveston, at which about thirty members of the association representing seventy-five of the eighty firms listed on the organization rolls, were present.

Besides the reports of standing committees and election of officers practically all of the day was taken up by a discussion of business conditions now prevailing in the territory served. The annual election resulted as follows: Arthur Wangemann of Brenham, president; A. Fulgham of Bryan, vice president; Jake Alexander of La Grange, secretary. The members-elect of the executive committee are: Alvin T. Lange of Galveston, Henry Schumacher of Houston, P. S. Reed of Beaumont, H. W. Houston of Austin and Norman Belk of Lufkin.

"The general belief of those present," said President Wangemann, "is that there will be a noticeable improvement in the wholesale grocery business as soon as a new crop is put on the market. Just now, due to declining prices and the fact that the values of cattle, rice and cotton are much lower than they have been for some time past, the wholesale grocery business has proven unprofitable. We are agreed that this unsettled condition does not exist only in our territory but believe it to be rather general throughout the country. Plans were discussed whereby we all feel able to stand the unsettled condition, and we think it to be a question of only a short time before a noticeable increase in the wholesale grocery business presents itself."

## Praise for Calumet Baking Powder Company

The Committee on Resolutions of the National Association of Retail Grocers, through its chairman, John C. Coode, of Tennessee, presented the following resolution to the Calumet Baking Powder Company of Chicago, which was unanimously adopted at its recent convention:

"We, your Committee on Resolutions, desire to take notice of the splendid cooperation of the Calumet Baking Powder Company.

"We note in its daily newspaper advertising it is giving the buying public the true facts regarding the retailers' position in the distribution of food products; therefore—

"Be it resolved, that we, the National Association of Retail Grocers in Convention assembled, endorse and commend the action of the Calumet Baking Powder Company in giving the facts regarding the Retail Grocers of the United States."

## Offer Ripe Olive Recipes

The California Olive Association has issued a California ripe olive recipe book, compiled and tested by Orabel Chilton and Maud D. Evans, of the Home Economics Department of the University of California, which offers a great many attractive methods of making use of the ripe olive, and in a great many cases dishes are suggested in which the use of the ripe olive is a distinct novelty. The recipes cover appetizers, sandwiches, salads and hot dishes.



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*Butters Bread  
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Company**

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This equipment has recently been released from a food product plant operated only four months. It is all up to date, complete, and in condition equal to new in every respect.

Other equipment available at bargain prices. Full particulars on request. Advise us of your requirements and we may have just what you want.

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## Just As We Go to Press

**W**E have just received in the last mail a number of letters which so well typify the service, THE AMERICAN FOOD JOURNAL is rendering the food field that we want to pass them on to our readers.

Anne T. Upham, Dietitian for the United States Rubber Co., writes: "While my name is not on your list as one of the dietitians who subscribe to THE AMERICAN FOOD JOURNAL, I have taken this magazine for about a year through the library of our company. *I have found it very interesting and valuable in this line of work.*"

A prominent Philadelphia advertising agency has found certain articles of great value. They write: "In your issue of March, 1921, there was started a series of articles by William Cruger Cushman. We have the first issue but not the following ones, and *would much appreciate your sending us the complete series, to date.*"

A third letter in the same mail comes from the Food Control Official of one of the Middle Western States, who says: "*I have been greatly pleased with the change in THE AMERICAN FOOD JOURNAL during the last few months.*"

These few specimens from the same mail indicate the trend.

We believe that every issue of the new AMERICAN FOOD JOURNAL is worthy of as wide an audience as possible. May we ask the cooperation of our readers in sending us the names of friends or associates who *ought to be regular subscribers*, and who are not now seeing the paper? And if you are a manufacturer and there is a possibility of your being with us in our advertising pages a little later, won't you encourage us by indicating the approximate date in the square provided below?

THE PUBLISHERS

July 15, 1921.



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We would like to tell you more about KVP Parchment—how it will put dignity into your business if you have never used parchment wrappers—how the KVP Brand, plain or printed, will prove its excellence and reliability under the severest tests.

"Do it the KVP Way!" Ask for samples and quotation.



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One cold water can cooling conveyor and elevator. Can supply blue prints.

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Also one Karl Kiefer Visco Filling Machine. All new machines.

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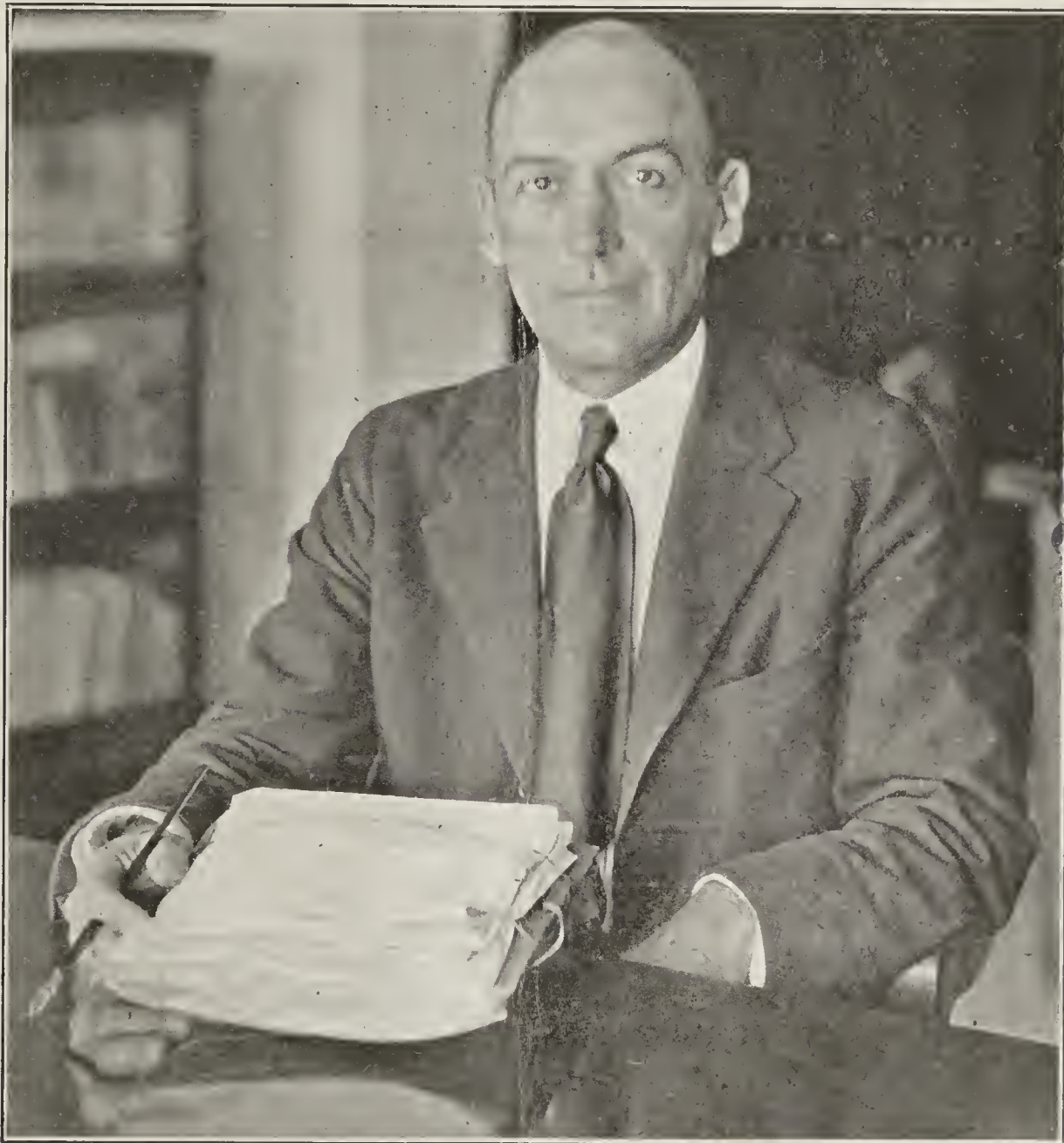
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AUGUST, 1921

# The American Food Journal

The National Magazine of the Food Trades



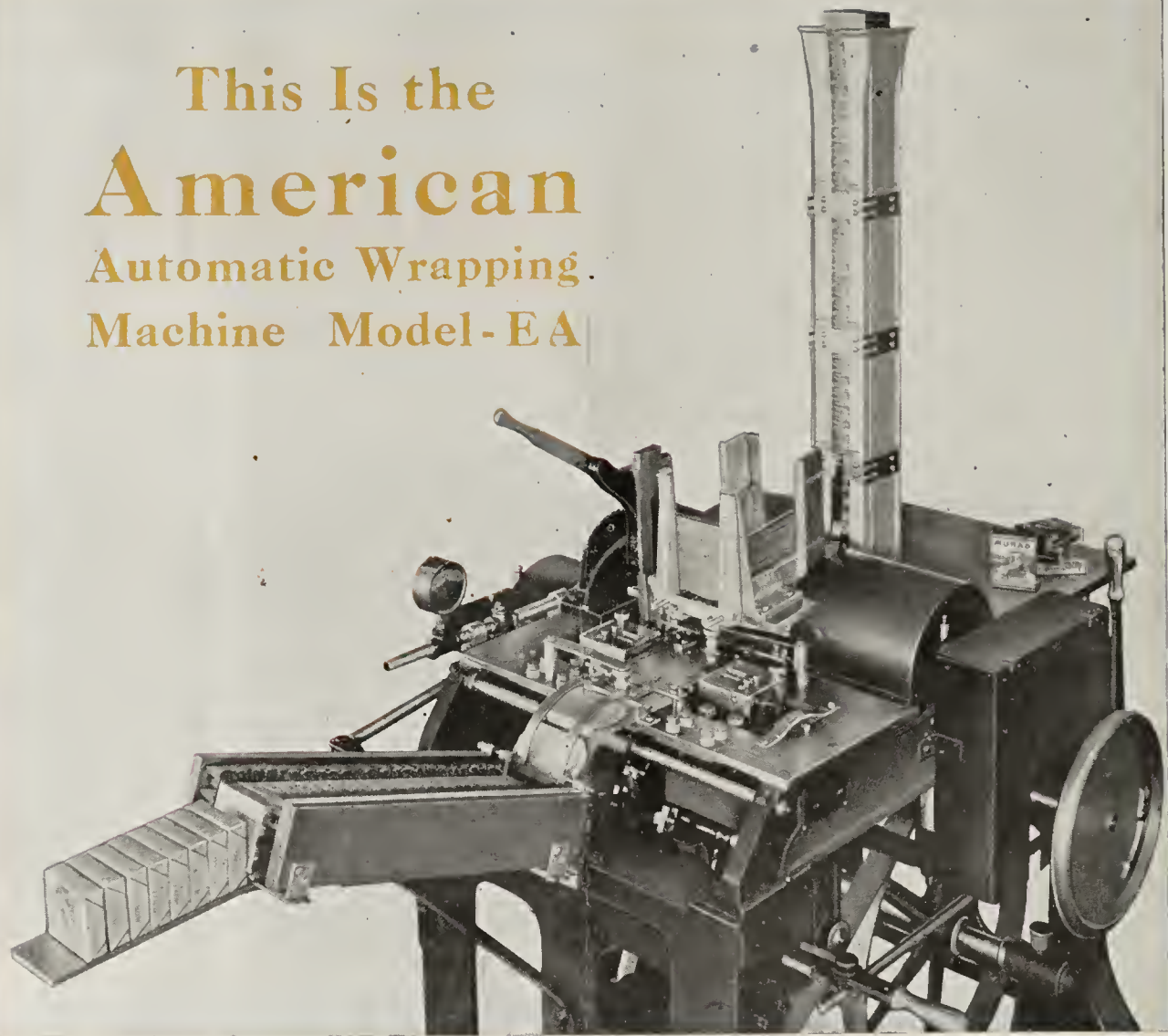
Walter G. Campbell, for five years assistant chief of the United States Bureau of Chemistry, whom Secretary of Agriculture Wallace has appointed Acting Chief of the Bureau, taking over the work of Dr. Carl L. Alsberg, now head of the new food research bureau at Leland Stanford University. Mr. Campbell is a Kentuckian and has been with the Bureau since the Food and Drugs Act went into effect in 1907.

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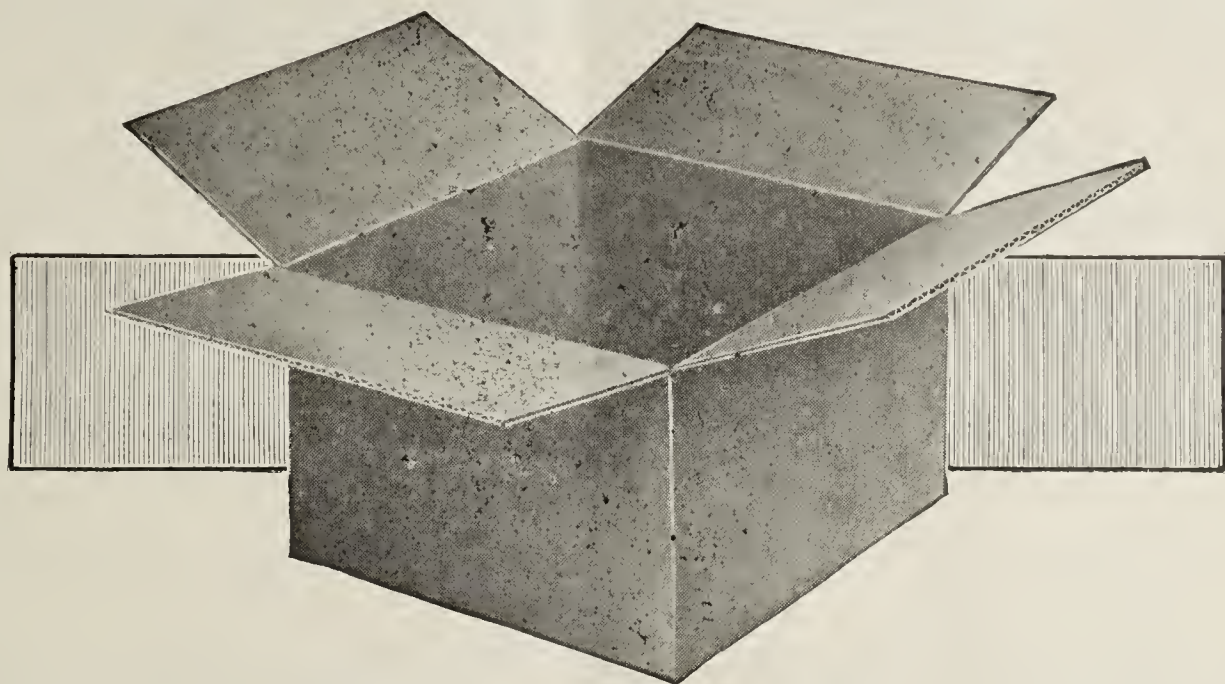
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# The American Food Journal

The National Magazine of the Food Trades

Published Monthly by  
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J. T. Emery, President

## The Editor's Column

### BEHIND THE SCENES

The editorial office of a publication is one of the most interesting places in the world. Something new is always "breaking"; there are bouquets and there are brickbats, to be received with equal composure; and one after another problems of policy on this or on that present themselves for solution. Not only is The American Food Journal no exception to this general rule which affects all publications more or less, but it may be truly said that the editorial staff of this journal is confronted with peculiar problems all its own.

### A BATTLE GROUND

The food field probably has no rival claimant for the distinction of being the most controversial of all industrial or scientific fields. Theories and counter-theories abound. Were The American Food Journal to help grind all the axes that are presented for our attention, we should have to go into the business of axe grinding and give up all thought of publishing a paper.

But herein lies, we believe, our greatest strength: our absolute freedom from the slightest influence or control on the part of any individual or group of those interested in any phase of the food field. We represent no particular school of thought. Our columns are open, in the true scientific spirit, to all those who have a real point to make whether it be the popular or the unpopular side.

The food field needs, and has long needed, a strong, unbiased publication of just this type. The letters we are constantly receiving show unmistakably that we are on the right track; but we want to hear from still more of you and learn how we are meeting your problems and how we can meet them in a still more effective manner. Will you write us?

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# When the Brain Is Hand-cuffed the Artist Sometimes Saves the Situation.

WORDS are, and always will be, the best and most immediate means of expressing ideas. That's the reason pictures have titles under them.

The photograph of Abe Lincoln is interesting in its kindly ruggedness. But far more interesting is Lincoln's Gettysburg address. That—and Lincoln's life—made his picture interesting.

Even the most interesting things about Leonardo De Vinca's Mona Lisa are not on the canvass. Read Walter Pater's Renaissance and be convinced.

It goes without argument that the artist is a very valuable asset to advertising. His picture attracts. It tickles the optic nerves. But it's the copy that convinces and sells.

## *Hammering the Idea Into Public Consciousness*

THERE is probably more effort back of *getting* white space than there is in developing the proper advertising *copy* with which to fill this space.

Mere publicity is no longer sufficient. No one, except those directly interested in advertising, buys a newspaper or a magazine to read the advertising.

Yet the public will read advertising eagerly enough, if it contains matter of real interest to the reader. This is one shining reason why—in the advertising of foods—a message is needed, while an eye-resting, space-filling picture may or may not be necessary.

The basis of an advertising message must contain an idea that vitally concerns the reader. For it is only after a real selling idea is presented, in combination with a convincing argument, that space becomes valuable.

There are two things in which practically every human being is always interested. One is in preserving the stock of health he has on hand—or adding to his present supply; the other is in making money—or in keeping more of what he has made.

## *No Longer Hypnotized By a Ham*

THE public cannot be told the fine points of health and wealth conservation in a pretty picture. It cannot be made to understand that even the pinkest picture of a ham cannot emphasize the nutritive value of this excellent food.

The most delectable-looking illustration of a package of oleomargarine contains no convincing proof of the purity and high food value of this product.

A "still life" of the most imposing dish of preserved fruit doesn't tell mothers about the marvellous health-building qualities of fruit—and how fruit may reinforce body alkalinity, and furnish vitamins essential to best nutrition.

In fact, it should be clear that no woman can know the actual health qualities of a trade-marked food or beverage unless the manufacturer—through the right kind of advertising—tells her about these qualities.

## *You Can't Get Expert Advice From Mahogany Desks and "Visualizers."*

THE Pure Food and Drugs Division of the Department of Agriculture, the Association of Advertising Clubs, and the publicity departments of rival organizations now scan with extreme care every line of advertising copy a company publishes.

Claims which are chimerical, or exaggerated, or which may be unscientifically founded, are subject to very embarrassing questions.

This is one reason why good selling copy must be written by men who know their subject, and who are familiar with all the chemical, clinical and dietetic details of the product.

Naturally, this requires special knowledge and special training, and a first-hand intimacy with the entire proposition—not only from its technical side, but also from its merchandising aspect.

## *The Practical Application of This Preamble.*

THE foregoing remarks briefly cover a condition that a leading food manufacturer may wish to remedy. For this purpose the services of the E. W. Hellwig Company are hereby advertised.

The E. W. Hellwig Company are accredited advertising agents—a company composed of experienced food men. Its staff consists of men and women of wide experience in advertising and merchandising; in scientific and dietetic research.

This is an advertising agency that does not generalize. It specializes in selected fields—foremost among which are foods and products sold through grocery channels.

Many interesting facts can be said about the E. W. Hellwig Company's business. But what is more interesting to you are the facts that the E. W. Hellwig Company can say about *your* business.

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# The American Food Journal

The National Magazine of the Food Trades

Vol. XVI

AUGUST, 1921

No. 8

## Meat Packers View Future with Confidence

Thomas E. Wilson and J. Ogden Armour at Convention in Chicago Believe Tide of Business Has Turned

UNIVERSITY OF ILLINOIS  
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AT the annual convention of the Institute of American Meat Packers held on August 8 and 9 at the Hotel Drake, Chicago, leaders of the meat packing industry expressed confidence in the future and stated their belief that the tide has turned toward better business conditions.

Thomas E. Wilson, president of Wilson & Company and also president of the Institute, said:

"We have every reason to look to the future with confidence, yet we should not be unmindful that a continuation of the present policy of strict economy is very essential."

J. Ogden Armour expressed similar views.

Mr. Wilson presented the Institute's annual survey of corporate profits. He gave profit, sales and investment figures covering a considerable share of American industries. These statistics showed that 170 non-packers whose reports were surveyed earned profits last year of \$813,128,417, on an investment of \$8,806,591,395, and sales of \$10,124,207,985, while the packing companies surveyed earned profits of only \$7,218,068 on an investment of approximately \$590,000,000 and sales of \$3,013,002,000. The non-packers did less than four times as much business as the packers, according to Mr. Wilson, and made more than one hundred times as much profit. The corporations surveyed, Mr. Wilson said, were selected on the availability of their annual reports.

### The Decline in Meat Prices

At another point Mr. Wilson presented a table showing declines in quotations of wholesale meat prices during the twelve months ending August 5. Some of the declines during that period, as cited by the speaker, follow:

Per Cent Decrease from Aug. 9, 1920	Per Cent Decrease from Aug. 9, 1920
<b>Beef:</b>	Choice saddles ..... 18
Prime nat. steers..... 38	Choice fores ..... 20
Good nat. steers..... 37	Medium lambs ..... 24
Medium nat. steers.... 37	Medium fores ..... 25
Heifers, good ..... 42	Medium saddles ..... 22
Cows ..... 27	<b>Pork:</b>
Hindquarters, choice ... 34	Dressed hogs ..... 25
Forequarters, choice... 32	Spareribs ..... 47
<b>Veal:</b>	Leaf lard ..... 35
Choice carcass veal.... 31	Prime steam lard..... 35
Good carcass veal..... 38	Pork loins ..... 21
Good saddles ..... 22	Hams ..... 29
Good backs ..... 41	Bacon (brkfst fancy).. 22
Medium backs ..... 40	Skinned shoulders .... 36
Lamb: ... .. 23	Rib bacon 8 and 12 Avg. 33
Choice Lambs..... 23	Regular hams ..... 16

Speaking further of packing house values Mr. Wilson said:

"Practically all by-products are lower now than in 1913, and many of them can not be manufactured except at a

loss on account of the poor demand."

Mr. Wilson formally stated the program which the packing industry, recently shown by the census reports on 1,305 establishments to be the largest in the United States, purposes to follow. Through the Institute of American Meat Packers, he said, it purposes:

"To secure co-operation among the meat packers of the United States in lawfully furthering and protecting the interests and general welfare of the industry.

"To afford a means of co-operation with the Federal and State Governments in all matters of general concern to the industry.

"To promote and foster domestic and foreign trade in American meat products.

"To promote the public interest and mutual welfare of its members in the study of the arts and sciences connected with the meat packing industry.

"To inform and interest the American public as to the economic worth of the meat packing industry.

"To encourage co-operation with live stock producers and distributors of meat food products."

### Live Stock Producer and Packer Both Suffered

In summarizing the meat packing business during the last year, Mr. Wilson, while expressing confidence as to the present and future, said in part:

"The processes of readjustment and reconstruction have been manifest throughout the year.

"The producer of live stock and the packer both have suffered from a continuous decline in values. Heavy declines in exports, as well as decreased domestic consumption, general industrial depression, unemployment and restricted credits have been contributing factors to a very unsatisfactory year for producer and packer alike. We exported in 1919 practically three billion pounds of meat products, worth approximately \$940,000,000. In 1920 we exported less than 1,730,000,000 pounds, valued at less than \$415,000,000, a loss in one year in exports of 1,270,000,000 pounds and in values of \$526,013,456.

"If the farmer and the laboring man could study these figures and the details of the several items included in such totals much of the complaint about declining live stock prices and the necessity for wage reduction should disappear.

"Figuring the packers' possible profit at 2 per cent on the turnover, on what he lost in this shrinkage alone in 1920, as compared with 1919, it would amount to more than eight million dollars. Since labor's part in each dollar of turnover is almost 10 cents, its loss in earnings amounted to more than fifty-two million dollars, while the producers' 85 cents of each of the dollars represents a loss of receipts of about four hundred million dollars. If this lost volume of foreign business increased our local supply



to the same extent, it, of course, still further affected and decreased the scale of wholesale prices.

"During the year 1918 we exported 728,000,000 pounds of beef; in the year 1919, 314,000,000 pounds, a decrease of 57 per cent, and in the year 1920, 164,000,000 pounds, a decrease of 78 per cent from 1918.

"The decrease in beef exports for the two years would amount to approximately 1,428,000 head of cattle, and the decrease of exports of pork products for the single year of 1920, amounting to 1,121,000,000 pounds, would be equivalent to approximately 7,000,000 hogs.

"The per capita consumption of meat and lard in the United States in the year 1920 was 154.3 pounds as compared with 163.3 pounds in 1918, a decrease of 13 pounds per capita. This decrease represents on the basis of our population in 1920 a loss of 1,365,000,000 pounds of potential consumption which, when considered together with the shrinkage in exports, the decline in by-products values, the increase in unemployment, the general decreased purchasing power of the public, the decline in commodity values generally, and the processes of deflation of the currency, largely accounts for the declines reflected in live stock values and the losses suffered by producer and packer alike."

In discussing factors likely to influence future conditions, Mr. Wilson said in part:

"Every indication points to the fact that the industry has about completed its readjustment and the position of producer and packer alike should improve.

"The recent census discloses figures which should strengthen the economic position of the producer. According to the census figures the number of cattle on farms on January 1, 1920, was 66,810,836; swine, 59,368,167, and sheep, 34,984,524. As compared with a previous official estimate these figures are less by 1,558,164 in the case of cattle which includes both beef and dairy animals; 12,358,833 in the case of swine, and 12,129,476 in the case of sheep.

"The number of beef cattle reported was 35,424,458, which was 9,325,542 less than the previous official estimate.

"The census of 1900 showed for every 100 inhabitants of the United States; cattle, 89 head; swine, 83 head; sheep, 81 head.

"In 1910, for every 100 inhabitants the census showed: cattle, 67 head; swine, 63 head; sheep, 57 head. In 1920 the figures show: cattle, 62 head, swine, 55 head, sheep, 33 head.

"Thus it is manifest that the production of live stock is not keeping pace with our growth in population. There has also been a shrinkage in the quantity of meat products in storage in this country.

"Cold storage holdings, which, of course, include all products in course of cure and preparation, on July 1, 1921, the latest data for which figures are available, were 1,195,822,000 pounds as compared with 1,374,622,673 pounds on July 1, 1920, and 1,423,619,433 pounds on July 1, 1919. As world conditions improve, there should be a corresponding increasing demand for our products which will tend to stabilize values.

"Conditions generally should improve when Congress has settled the tariff, taxation and other important questions. The movement of the President to bring about an agreement among the nations to limit expenditures for armament if successful will do much to lighten the burden of taxation and will turn uncounted millions of wealth toward the pursuits of peace and industry.

"As these great problems are solved there will be a steady advance toward conditions which should make for the re-establishment of business stability, a relaxation of credit restrictions and a corresponding revival of industrial activity."

#### J. Ogden Armour Optimistic

J. Ogden Armour, as chairman of the finance committee, said:

"Your committee is among those who are optimistic. We see improvement in the past few months, and believe firmly that the tide of business has turned. Nevertheless, it is desirable to keep all hands at the oars."

In this connection Mr. Armour also said:

"It is the belief of your finance committee that conservatism and caution must be the watchwords during the coming year. The fact that periodical balances are again appearing in black ink ought not to be taken to mean that the red ink which has had constant use for two years past can now be thrown away. Just as the packing industry was the first to suffer from post-war readjustment, so is it to be hoped that it will lead the procession out of the mountains of adversity into the valley of prosperity. The meat packers did not fight liquidation. Many other basic industries did, however, and some of them have succeeded in staving it off even to this time. They cannot continue to do so, however, and eventually they will have to go through the same process this industry has gone through. The result will be that when many other industries are in the throes of readjustment, the packing industry will again be out in the clear with a reasonable chance for doing business on a profitable basis."

At another point Mr. Armour stated:

"The stability of the meat packing industry was demonstrated during the past year. All of the difficulties pictured in the report of the finance committee at Atlantic City were encountered: money was scarce and high-priced, volumes fell off materially, export trade was practically nil, operating costs remained at unreasonably high levels—yet there were few if any failures among meat packers. They weathered the readjustment storm successfully because their past record of business efficiency and the confidence which banking circles reposed in them, enabled them to finance themselves over many successive months of losses.

"We are on the same road today that we were a year ago but with this difference. The end of the road seems to be in sight. At any rate, there are evidences that the worst part of it has been traveled and that the going will be less difficult from this point on, especially if the lessons which have been learned in the last few years are not forgotten."

## Walter G. Campbell New Acting Chief of Bureau of Chemistry

By an order of Secretary of Agriculture Wallace, Walter G. Campbell, assistant chief of the Bureau of Chemistry since 1916, is made acting chief to fill the place of Dr. Carl L. Alsberg, resigned.

Dr. W. W. Skinner, chief of the water and beverage laboratory of the bureau since 1908, is designated as assistant chief.

Mr. Campbell has been with the bureau since 1907, when he was called from his work of assisting in enforcing the state food and drug laws of Kentucky, and was selected by Dr. H. W. Wiley, then chief of the bureau, as chief

inspector to organize the inspection work under the Federal Food and Drugs Act, which became effective at that time.

Upon the reorganization of the Bureau of Chemistry in 1914 he was made chief of the Eastern food and drugs inspection district, and in December, 1916, was promoted to assistant chief. Mr. Campbell has been largely instrumental in organizing the field work of inspecting interstate and foreign commerce in food and drugs. He is 44 years old, a native of Kentucky, and a graduate of the University of Kentucky.



# Exploded Fallacies About Meat\*

## A Discussion of the Effect of Flesh Foods Upon Human Metabolism and a Reply to Many Attacks

By W. H. LIPMAN, M. D.

Chairman of Sub-Committee on Corrective Education of Committee on Nutrition, Institute of American Meat Packers

WHEN we analyze the several causes that have operated for the past fifteen or twenty years in producing the decline in the per capita meat consumption in this country, we find that one of the reasons, or perhaps the main reason, for this decline is the fact that the public has been frightened away from meat by being told that it is a harmful food. The public was constantly warned that eating meat will bring on this or that disease and there was hardly a disorder that was not ascribed to it directly or indirectly. These warnings did not contain proof that meat is harmful, for the simple reason that there was no evidence with which to prove it, no scientific ground or actual experience on which to base such an assumption. The question naturally arises to why meat was charged with being a cause of disease when there was no positive basis for such a belief, and it is a very interesting and important question, too.

We therefore wish to discuss very briefly the origin of the conception that meat is harmful and how and why this conception has been emphasized with increasing intensity in the past four or five years. Also, we propose to show, first, that the attack on meat as a food is not based on scientific facts and is therefore not justified; second, that if allowed to continue it will undoubtedly result in harm to public health, and third, how the sub-committee on corrective education of the Institute of American Meat Packers has already met this attack to some extent.

The idea that food as such causes disease after it is consumed is not a new one; in fact, it is very old, as old as the science of medicine itself. It dates back to the early days when medicine and its allied sciences were in their infancy, when exact laboratory methods, the microscope, and the marvelous instruments of precision of present-day science, were unknown. It had its inception in the days long before bacteria and their relation to disease were discovered, the days when speculation regarding the origin of disease was more prevalent than fact.

Of course, even in those days it was well understood that air, food and water were necessary to sustain life, and with speculation rife, it was only a step to assume that since these substances were all that man normally took into his body they were responsible for all the diseases that he was subject to. So we find in old medical literature theories without number in an attempt to explain how noxious or bad air, food and water, so altered the fluids and organs of the body as to pervert their functions and cause disease.

### The Charges Against Meat

It was only natural that meat, which from time immemorial has been the vital food of man, should share the general accusation that food causes disease, and it was particularly charged that it causes rheumatism, gout, and kidney diseases, together with a host of other conditions.

In that era information on medical subjects was confined to medical books and to teaching in medical schools. The general public was not kept informed on medical matters except when advice was given patients in case of illness. This state of affairs continued for a long time and is to a great extent true today in the sense that the public is not sufficiently advised about the true state of medical problems. It is unfortunate that the medical profession does

not keep the public informed of all the advances that have been made in recent years in the science of nutrition and the new ideas advanced by the leaders in medicine and its allied sciences, regarding the relationship of food and disease. Fortunately, however, the organized medical profession of our country has very lately taken steps to launch a campaign of education that will lay before the public the exact truth about modern medical science, its limitations and possibilities because it has long been realized that such a campaign would greatly promote the public welfare, and establish better relations between the public and the profession. Meanwhile the public is being showered with a wealth of information or misinformation from various quarters about medical matters in general but particularly as regards food and nutrition in general, which in many instances has resulted in a great deal of harm.

### Misleading Articles in Public Press

Of late years the number of newspapers, magazines and similar publications in the country has increased enormously, so that there is hardly a town, village or hamlet that does not have a paper, and literally hundreds of different magazines are published and circulated.

In an attempt to increase the attractiveness of these publications, treatises are carried on subjects which heretofore were confined to technical and professional works. Everyone is familiar with the increase in the number of articles that now appear in the daily papers or in magazines on scientific subjects of various kinds, on sociology, economics, business and other matters. It is only natural that such an important subject as public health should receive its share of attention on the part of the publishers, and we therefore find that for the past few years articles commenced to appear on various phases of medical science, including food and nutrition. In addition, various medical and pseudo-medical cults and fads have sprung up which again resulted in a flood of popular literature.

Then came the war and with it the necessity of conserving food. This gave an added stimulus to the writers on nutritional subjects in popular publications and the number of articles written multiplied many times.

There is no better medium for promoting public health than to keep the public informed on matters of hygiene, sanitation and nutrition, because if the public understands the principles underlying them, many diseases could be prevented. Conversely, the less the public knows about these subjects, or what is still more important, if the public is misinformed either on the principles of hygiene, sanitation or nutrition, public health is bound to suffer. Hence the great importance that the information which the public gets through the newspapers or magazines should be in entire accord with the best knowledge of the day and must not be biased nor influenced in any way.

### Literature Often Not Based on Facts

But unfortunately that is not always the case, especially as regards food and nutrition. A great portion of the literature on the subject offered the public today is not based on fact nor authoritative opinion at present available. This is particularly true as regards meat. It seems that many of the popular writers on the value of meat as a food have not taken trouble to inform themselves on the best and latest authoritative opinion, and particularly have they failed to keep pace with modern thought on the sup-

\* An address delivered at the annual convention of the Institute of American Meat Packers at Chicago August 8.



position held long ago but now largely discarded, that meat was the cause of disease.

Hardly a magazine is published today but does not contain some reference to meat as a harmful food. No other one food has been subject to such vicious, unfair and groundless attacks as meat. Nor is the attack on meat limited to the press and magazines. The manufacturers of many foods, in an attempt to place their product in the best light, very often preface it with an attack on meat.

The material utilized by the authors of these attacks is very evidently taken from the old medical writings and in many instances the old ideas are grossly exaggerated. Throughout all these attacks it is quite apparent that the writers are not acquainted with the newer knowledge on the subject of the relation of food to disease, or are purposely omitting them.

These attacks have undoubtedly discouraged meat-eating, and, as stated before, they have been an important, if not the most influential single factor in causing the decline in the per capita meat consumption in this country.

#### Diseases of All Kinds Charged to Meat Eating

These attacks have charged meat as being the cause of almost every conceivable condition, ranging from some trifling condition such as baldness to such serious maladies as cancer. An article appeared in a prominent New York daily last February stating that meat was the cause of the declining birth rate in this country and in Europe.

Misinformation regarding meat or any other food, especially in its relationship to disease is very likely to cause considerable harm because if the public is led to believe that this or that disease is produced by food they will be induced to abstain from that food in the hope of effecting a cure instead of seeking adequate medical treatment and in so doing neglect the disease until a cure is no longer possible.

The function of the sub-committee on corrective education of the committee on nutrition is to study and analyze these attacks carefully and to prepare replies to them to be sent by the Institute if deemed advisable. These replies carefully avoid making any belittling or disparaging statements regarding any other food. We point out the inaccuracies and misstatements that have been made about meat and we ask that they be avoided in the future. We quote the authorities on which we base our arguments in all cases so that there can be no question about them.

The conditions most often mentioned in the attacks on meat as having been caused by it are rheumatism, gout, kidney disease, cancer, auto-intoxication and high blood-pressure. We believe it would be profitable at this time to show how the fallacy that meat causes these conditions has been thoroughly discredited and disproved and to illustrate with examples how the sub-committee on corrective education replied to some of these attacks.

#### Fallacies Regarding Uric Acid

It is not necessary these days to go into the cause of rheumatism with a modern audience. The disease is so comparatively common and the fact that it is caused by infection and carried by the blood stream to the parts involved has been so thoroughly drilled into the public that nearly everyone is familiar with it. Such is not the case with gout, however. We still meet with statements that meat causes gout by virtue of the fact that it produces uric acid in the body. No other subject in medicine has been so misused, maligned and accused as uric acid. In the first place it must be understood that it is a normal product of the body chemistry and is derived not only from meat alone but from some vegetable foods as well and also from the body tissues themselves. Uric acid has been charged with being the root of almost every conceivable ailment and was looked upon as the cause of rheumatism until infection was proven to be the true cause. As a matter of fact, there never was any sound scientific proof that uric acid causes either rheumatism or gout. After it was absolved from causing rheumatism, the more thoughtful of the investigators cast a doubt on its guilt in

causing gout and it is quite well established now that uric acid is a result of gout rather than its cause.

Permit me to quote the opinion of Dr. Llewellyn Jones Llewellyn, senior physician, Royal Mineral Water Hospital, Bath, England, where gout has been treated for several hundred years. Undoubtedly, more cases of gout have been treated there than anywhere else in the world. In his exhaustive work in gout published a few weeks ago, Dr. Llewellyn has this to say regarding the cause of gout:

"Gout, it has been well said, is the 'Nemesis of high living,' for unquestionably overeating is most fertile in evoking any latent tendency thereto. Attempts to throw all the blame on any particular foodstuffs, e. g., red meats, etc., on the ground that these highly nitrogenous substances engender excessive formation of uric acid, have failed of their object."

"The old order changeth, giving place to new,' and the uric acid theory having failed us, it is essential that we cast round for some other solution of the problem, carrying with us, however, this guiding principle, that uric acid, having lost its status, be viewed in its right perspective as not the cause, but the consequence of gout."

#### Gout Caused by Infection

Dr. Llewellyn believes that gout is caused by infection which travels from some remote spot in the body, such as the teeth, tonsils, nose and throat, to the blood stream and lodges in the joints. Dr. Llewellyn's ideas on the treatment of gout are very interesting and coming as they do from one of the greatest living authorities on the subject, are very important. Dr. Llewellyn states, on page 345 of his book, as follows:

"Ruthless cutting off of protein foods, though not so usual as of yore, is still far too commonly practiced. The number of unfortunate wretches who are docked of their red meats is still astonishing. The 'uric acid' bugbear dies hard. Unless red meat is known to disagree, I never advise a 'gouty' subject to abstain wholly therefrom. I feel sure that it is rarely, if ever, called for, and when enjoined has frequently wrought much harm. As far as I know, there is no scientific reason for the very prevalent idea that for the 'gouty' white meat is preferable to red. It is certain that both contain an equal quantity of extractives, and equally certain that for some, white meat is more indigestible than red."

Meat has been advanced as one of the causes of inflammation of the kidneys, or Bright's disease, for a long time. During the days before the cause or nature of Bright's disease was as well understood as it is today, it was believed that the products that resulted from the use of meat in the body irritated the kidneys as they passed through them on the way from the body and caused inflammation. Although this theory has been abandoned by the best medical authorities, it is still quite prevalent among the general public and forms a favorite basis for attacks on meat.

In April of this year there appeared an attack on meat in a leading daily in New York City which, among other things, carried the statement that the people of this country eat too much meat, thereby causing an "overload of protein," which gradually "smashes the kidneys and jams them out of commission."

Now let us see what the authorities say about the cause of Bright's disease.

The late Dr. William Osler was one of the greatest, if not the greatest physician the world ever had. He was successively professor of medicine at McGill University, University of Pennsylvania and Johns Hopkins, and at the time of his death in 1919, was professor of medicine at Oxford.

In the last, ninth, edition of his "Practice of Medicine," written shortly before his death and published in 1920, he gives the causes of Bright's disease as follows:

"Acute Form: Cold, acute infectious diseases, chemicals such as mercury, turpentine, carbolic acid, etc., burns." Speaking of the causes of the chronic form he states, continued bacterial septicemia, secondary to focal infection is



probably the most important cause. In other words infection with bacteria or their products from distant spots in the body is the most important cause. Meat or any other food is not mentioned as a cause and the only reference to food is that statement that alcohol and overeating are contributory causes.

"Oxford Medicine" in six volumes is unquestionably the most comprehensive work on medicine in existence. The list of its authors contains the leading medical teachers of this country and England and it is edited by Dr. Henry A. Christian, professor of medicine at Harvard, and physician in chief of the Peter Bent Brigham Hospital, Boston, and Sir James Mackenzie, consulting physician, London Hospital, and director of the Clinical Institute of St. Andrews, Scotland.

The third volume, just off the press (1921) contains the section on the diseases of the kidneys written by Professor Christian himself, and he discusses the causes in great detail.

According to him "infections of various sorts cause most of the cases of acute nephritis. . . . Food intoxication . . . has lost caste in the light of modern studies."

#### Relationship of Food to Nephritis

He believes that some cases of chronic nephritis are the result of acute attacks and others are caused by infections from the throat and respiratory passages. As regards food as a cause of chronic nephritis, he has this to say:

"The relationship of food to chronic nephritis is an interesting one about which there has been more speculation than observation. Overeating, eating improper food, imperfect digestion, may play a considerable part in causing chronic nephritis, beyond that we cannot go at present. There again is a field in which careful and prolonged observation and experimentation is needed."

A. L. Benedict, writing in Fitch's "Dietotherapy" (Appleton, 1918), the most extensive work on dietetics in the English language, makes the following statement while discussing the advantages and disadvantages of high and low protein diets:

"It may be granted that if the function of the kidneys is defective there will be a retention of urea or other nitrogenous waste products in the body and the organism will suffer accordingly. Yet, on the other hand there are certain sections of the earth where the inhabitants live for months upon flesh, fish and fowl, and they do not appear to suffer more than Americans or Europeans who live on a mixed diet. It is known that carnivorous animals subsist entirely on flesh, and there is no evidence that they suffer from disease of the kidneys, from the overwork of their organs."

#### The Theory of Meat and Cancer

Cancer is of course one of the most serious afflictions of man and more theories have been advanced to explain the cause of cancer than perhaps any other disease, but unfortunately so far nothing definite has been proven.

It is true that in the anxious search for a cause, meat has been suggested as a possible indirect cause of cancer, but no definite relationship was ever established. Although such a relationship was merely in the nature of a speculation it has been made use of by some writers of late as a basis for a positive statement that meat causes cancer and that it can be cured by abstaining from it. When we realize that the only cure for cancer is early diagnosis and operation, it is seen at once that the statement that cancer is early diagnosis and operation, it is seen at once that the statement that cancer can be cured by abstaining from meat will cause incalculable harm because instead of undergoing an operation the patient will be induced to try to avoid meat and in that way prolong the disease to the degree when an operation can no longer cure it.

In May of this year an article entitled, "Cancer Cured by Food," appeared in a popular magazine, which attempted to show that meat caused it and that cures were obtained by avoiding meat. We replied to this article through the Institute in part as follows:

"Food as a possible cause of cancer has been investigated time and again by research workers the world over, and has always been found not to be the causing agent.

"That animal food does not cause cancer can easily be seen from the well known fact that the peoples who live on a diet composed exclusively or very largely of meat and fish are entirely free from cancer. This has been known for a long time and has recently received corroborative evidence by the investigations of Vilhjalmur Stefansson, the explorer, as reported by Dr. H. C. Ross in the 'Lancet,' a leading British medical journal. In the issue of March 29, 1919, Dr. Ross states as follows:

"To the Editor of the Lancet:

"Sir.—Mr. Vilhjalmur Stefansson has returned from his expedition to the Arctic and has written to me from Alaska to state that cancer does not exist among the Eskimo. He kindly undertook this investigation at my request when he left in 1914. Previous to this Sir W. MacGregor, Dr. W. T. Grenfell, Mr. Frank Bezley, and more recently Rear Admiral Peary, have all told me that they had never seen a case of cancer among the native tribes of the Far North; and it was their observations which prompted me to ask Mr. Stefansson, on the eve of his departure in 1914, to make a special investigation. Mr. Stefansson also sends opinions to the same effect from Dr. Grafton Burke and the late Dr. George Howe, who worked for many years on the Yukon River. It may be remembered that Panum half a century ago remarked that the disease was either extremely rare or did not exist in Iceland and South Greenland.

"I think, therefore, we may safely assume that cancer does not exist in the Arctic. It is a point of great importance to cancer research, for it has been generally accepted that the disease is ubiquitous. This evidently is not the case, and the question now arises as to how far this new fact may alter our conceptions as to the causes of the disease. It seems to me that the absence of cancer can only have one of three explanations—racial, dietetic or climatic. The Eskimo were originally Asiatics like all the Indians of the American continents, and there is no reason to suppose any physical or physiological difference which will exempt them from cancer. Moreover, Panum's observations were on Europeans—Norwegians and Danes. Dietetically the Eskimo are enormous meat eaters, but until twenty years ago did not have vegetables; otherwise their food does not differ from that of other natives, and Panum's observations again negative a dietetic explanation. The climatic explanation seems the best for the climate of the Arctic differs from any other part of the inhabited globe; but it revives the parasitic theory. The cold is so intense that saprophytic organisms cannot exist. Nothing putrefies if left in the open. While contagious diseases (venereal, etc.) are common, diseases which are contracted from the general atmosphere, such as a "cold" are unknown. It would appear that cancer would come under a similar category, and that part at least of the cause of it is due to an organism which invades the body from without, which is air-borne in part of its life history, and which cannot exist in the Arctic climate.

"Although I have tried to correlate them, all the other theories as to the causation of cancer appear to me to fail in view of the new proved fact that the disease does not exist in the Far North. I have sent all the details to the Journal of Cancer Research, but think that those interested in the cancer problem in this country might also like to hear briefly of Mr. Stefansson's discovery.

(Signed) H. C. Ross,

Clinical Laboratory, Ministry of National Service."

#### Vegetarians Subject to Cancer

It is a well known fact that peoples who live on a vegetarian diet are subject to cancer. Suguira and S. R. Benedict in an article on "Influence of Certain Diets upon Tumor Susceptibility and Growth in Albino Rats" (Journal Cancer Research No. 4, 1920), reported that those Japanese and Indian races who live on a vegetarian diet have cancer with the same frequency as those who live on a



mixed diet. Furthermore, it is common knowledge that herbivorous animals have cancer. (Veterinary Pathology—A. B. Kinsley.)

Another common attack on meat is the statement that meat decomposes in the digestive tract if not thoroughly digested and absorbed and that the products of decomposition are highly poisonous and may cause various diseases.

In June, 1921, a more or less popular health magazine contained a venomous attack on meat which carried the following statement:

"The chief objection to meat-eating is the things that happen to the unused residues which find their way into the long and sluggish human colon. Lying in this warm, moist chamber, the undigested particles of meat undergo changes which produce death-dealing poisons."

Taking that statement as a basis we replied to the article in question in part as follows:

"We respectfully submit that this is a most extravagant statement not supported by modern scientific opinion. In this as well as in any other food questions we must ultimately depend on the opinions of those who are the recognized authorities on the subject.

"Graham Lusk, Professor of Physiology, Cornell University, undoubtedly one of the world's foremost living authorities on nutrition, makes the following significant statement on page 18 of his book, 'Food in War Time.'

"So far as is known, taking meat even in large excess is not harmful."

#### Opinions of Nutrition Experts

"A. E. Taylor, M.D., for many years professor of physiological chemistry, University of Pennsylvania, and recently appointed a director of the newly created Food Research Institute of the Leland Stanford University, in writing on auto-intoxication in Osler's 'Modern Medicine,' one of the most comprehensive works on the practice of medicine ever published, expresses himself as follows on page 530, volume 2:

"Does the excessive ingestion of protein lead to abnormalities in the metabolism to auto-intoxication? There is current an idea that the heavy consumption of protein is harmful. It is supposed to be responsible for gout, innumerable ill-defined diatheses, arteriosclerosis, nephritis, a large number of skin diseases, and, by the extreme vegetarians, for an intoxication sui generis. For all these claims there is no adequate basis.

"J. J. R. MacLeod, professor of physiology in the University of Toronto, in the chapter on bacterial digestion in the intestine, third edition of his work 'Physiology and Biochemistry in Modern Medicine,' states as follows on page 538:

"It is probable, however, that the importance of the relationship of excessive protein putrefaction in the intestine to many of the so-called minor diseases cannot be overemphasized. On the other hand, we must be careful not to attribute every sort of chronic condition to this putrefaction. Toxemia is often a shibboleth of the profession. When a chronic disease cannot be diagnosed, it is put down as toxemia. This, however, is not medical science—it is medical shirking. It is certainly unsafe at the present time to conclude that the ordinary symptoms of senescence, such as hard arteries or increased blood pressure, are invariably attributed to this cause."

"W. H. Jordan, director of the New York Agricultural Experiment Station, in his work 'The Principles of Human Nutrition,' while discussing vegetarianism on page 251, says:

No proof is yet forthcoming that a reasonable mixed diet of flesh and vegetables is any more dangerous to health through the kind or extent of bacterial development than is a purely vegetable diet. Doubtless heavy meat eating,

especially when excretion is imperfect, may result in tonic disturbances, through putrefactive fermentations in the intestines, but while 'auto-intoxication' may be prompted under abnormal conditions by an abundance of meat proteins in the intestinal tract, there is no evidence that reasonable flesh eating is more dangerous in this particular than a vegetable diet. Inferential conclusions based on bacterial counts are not safe. That is, it is not proved that, under normal conditions, a possible excess of intestinal bacteria with a mixed diet does any harm. It seems probable that the acute indigestions sometimes attendant upon generous consumption of vegetables, fruits and various 'sweets,' and which may be due to bacterial action, are fully as serious as any similar disturbances that may be caused by flesh eating."

#### Relation of High Protein Diet and Blood Pressure

One of the most popular medical subjects of today is blood-pressure. So widely has been the subject discussed in popular literature as to lead the public to believe that it is a disease in itself. As a matter of fact it is only a symptom of various underlying conditions and merely serves as a warning of approaching serious disease.

The cause of high blood pressure is not well known as yet. It is believed by some that a diet high in proteins will cause it to rise and for that reason people have been admonished even by physicians not to eat too much meat, especially if their blood pressure happens to be rather high.

In an article on "The Influence of Protein Food on Increased Blood Pressure" read before the Association of American Physicians May 4, 1920, Dr. H. O. Mosenthal of Mt. Sinai Hospital, New York, states as follows:

"Protein food has generally been regarded as having a definite influence on blood pressure. A diet high in proteins has been supposed to raise blood-pressure, and vice versa. This principle has been widely applied in all diseases associated with hypertension and as a rule, a diet low in proteins, especially in meats, has been prescribed for patients exhibiting an increased arterial pressure.

"It is disappointing to note on what very meager evidence the above ideas are based. Goodall published some very convincing observations which showed that a distinct drop in blood-pressure occurred in cases of chronic interstitial nephritis on a low protein diet. Practically all other efforts in this direction, and they are very numerous, have confined themselves to general statements, which either expressed an approval or in some instances a disbelief in this relation of blood-pressure to diet; however, the concrete evidence of carefully observed cases has been largely lacking."

Dr. Mosenthal conducted some careful experiments at Mt. Sinai Hospital with high and low protein diets and in reporting results he states:

"From these observations it would appear that it is exceptional for a low protein diet to diminish the blood-pressure or a high protein diet to raise it."

We hope we have given you a fair idea of how widespread the attack on meat on the ground that it causes disease has been and how important it has been as a cause in reducing the consumption of meat. We believe that it is imperative that this attack be met on a fair, scientific basis. We feel certain that the misconception that has been created in the public mind regarding meat can in that way be cleared away. This work, in order to be effective, must be vigorous and prolonged. It cannot be expected that impressions about meat that have been created over a period of years can be rooted out in a short period, but we are confident that it can be done if undertaken properly, carefully and for a sufficient length of time.

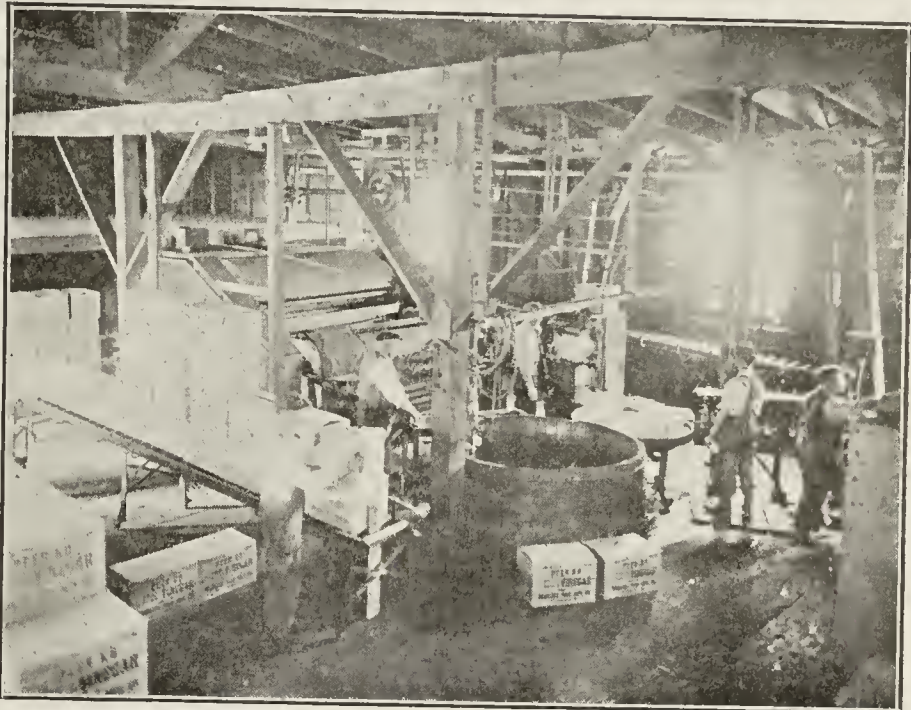
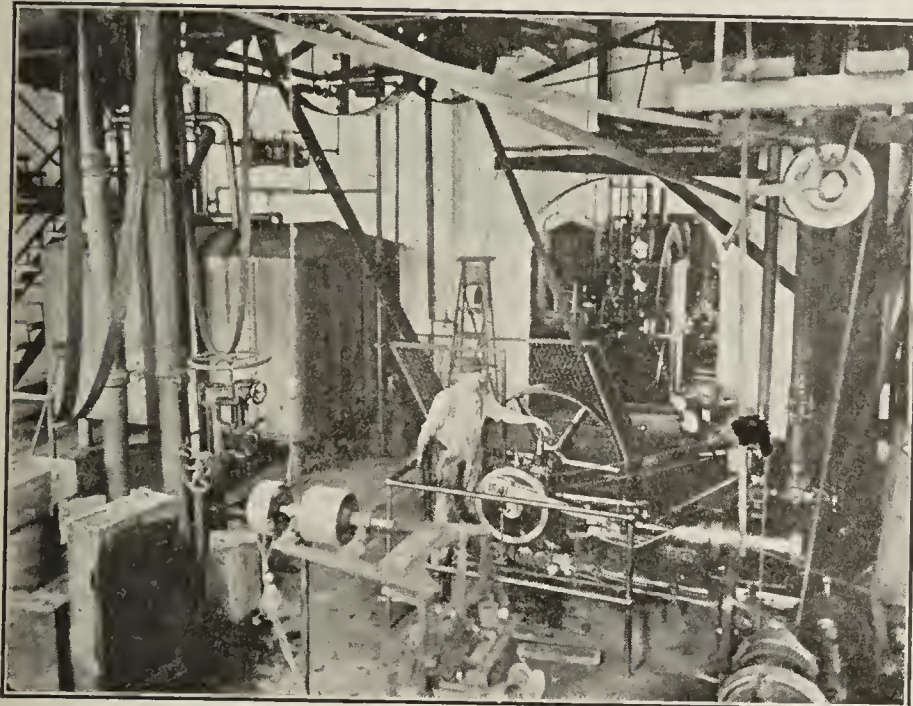
Two other excellent contributions on the subject, "The Value of Meat in the Diet," will be published in the September issue. These are papers read at the annual convention of the Institute of American Meat Packers at Chicago on August 8 and 9 by William D. Richardson, chief chemist, Swift & Company, and Paul Rudnick of Armour & Company, both of whom, together with Dr. W. H. Lipman, the author of the article concluded on this page, are members of the Committee on Nutrition of the Institute.



# What a Brewery Can Do—Make Cereal Vinegar

## How the Peerless Food Manufacturing Company Has Converted Former Beer Making Plant

By OSCAR JAMES VOGL



At left, interior of lower section of brew house showing kettles in which grain is boiled, strainer used to separate the hull from the wort and the engine room. The engine in the foreground operates the mash tub, elevator and conveyors. At right, interior of bottling room showing operation

**O**FTEN one man's loss is another man's gain, but seldom do two forces combine to create a new enterprise for mutual benefit. This is what happened, however, when the Volstead law went into effect on July 1, 1919, and the building and equipment of the Moose Brewing Company of Roscoe, Pa., became the property of the Peerless Food Manufacturing Company of Pittsburgh, Pa.

After that eventful July day when the death knell was sounded for the brewing of any but non-alcoholic beer, many brewing companies jumped into the near-beer and soft drink manufacturing line, while others hastily entered the food field. In the case of the Moose brewery, the plant and equipment was turned over with comparatively little change to the manufacture of cereal vinegar.

Sebastian Eger, president and general manager of the Peerless Food Manufacturing Company, was trained in the wholesale and retail food field. He occasionally witnessed the making of cider vinegar and the process employed did not always impress him most favorably. He planned for the time when he could make vinegar as he thought it should be made—in a clean, wholesome plant.

Therefore, when Charles Laughlin of the Moose Brewing Company found himself out of a job and with a big brewing plant on his hands, Sebastian Eger's opportunity had arrived. A new food enterprise was founded and the company acquired the plant and brewing equipment, which is ideally suited for the manufacture of vinegar and condiments.

### Vinegar an Ancient Seasoner

Vinegar, taken from the French "vin aigre" (sour wine), has been known as long as wine itself. The ancients had several kinds, which they used as a drink. The Roman soldiers were accustomed to take it on their marches.

The Bible represents Boaz, a wealthy citizen of Bethlehem, providing vinegar for his reapers, into which they might dip their bread. From this we may infer that harvesters at that period partook of this liquid for refreshment, a custom still prevalent in Spain and Italy.

It is conjectured that the vinegar, which the Roman soldiers offered to our Savior at His crucifixion, was that which they used for their own drinking.

There are only two kinds of vinegar. These are fermented and distilled. Fermented vinegars are cider, malt, sugar, grape and other fruit vinegars. Distilled vinegars, frequently called pickling vinegars, are made from corn, barley, malt and rye. The vinegar distillery differs little from the ones devoted to the manufacture of alcoholic beverages. A brewery equipment lends itself exceedingly well to the manufacture of these vinegars. The changes necessary are few and inexpensive when compared with those necessary for the manufacture of other food products.

The process of making distilled vinegars is to first convert the grain into sugar and the sugar into vinegar.

The malt, corn and rye are placed in a so-called brew-masher, which is simply the infusion process of the materials after grinding in water at a certain temperature, by which a "grape sugar" is produced from the starches of the grain. After the sugar is developed the mash is run off into large tanks and yeast is added to promote fermentation, which changes the sugar into spirits (alcohol) and carbonic acid gas.

This fermented mass is subjected to the process of distillation whereby the spirit vaporized is driven into pure filtered water. Condensation takes place and we now have a low proof spirit from which we produce vinegar.

### Changing Brewery into Vinegar Plant

The top or fermenting cellar requires no changes. All tubs remain the same because the liquid vinegar or wort, as it is technically called, is handled just the same here as in making beer.

The most radical changes in transforming a brewery into a vinegar factory have to be made in the casks in the second beer cellar. Here the head of each tank has to be removed, the shellac scraped from the insides of the casks and then repacked with rolls of rattan. When this is done





View showing lower part of generators and wooden pipe line in which the vinegar is conveyed to the storage tanks.



View showing upper section of generator room. These are the tanks which have been scraped and made into vinegar generators where the wort is dumped into them and made into vinegar.

the tops of the casks are replaced and equipped with automatic dumping devices into which the wort is run and from there dumped over the rattan packing or vinegar generator.

In the bottom cellar, the casks have to be likewise scraped. All iron rods and manholes have to be removed for these casks have now become vinegar storage and aging tanks.

All iron and copper pipes have to be removed from the brewery and replaced with wooden pipe lines. The interior has to be painted with acid proof paints, while the bottling department has to also yield its old equipment to be supplanted by a modern acid proof bottling device.

While the transformation process from brewery to vinegar plant is a simple and inexpensive one, the problems of becoming a successful vinegar maker do not all rest in the manufacturing end.

The selected grain is first toasted, ground and placed in a mash tub where boiling water is used to wash out the full body of the grain, leaving nothing but the hulls.

The fluid containing all the valuable body of the grain is then run into large wooden vats, where yeast is added and the whole mass is allowed to ferment. After several days this fluid is filtered and run over vinegar generators and made into clear brownish colored vinegar of pleasing taste and aroma.

Through the toasting of the grain and different manipulation of it, it is claimed that more nutriment is left in the finished product and great stress is being laid on this point in the entire selling and advertising campaign.

#### Clever Advertising Helps Selling

Throughout its career this new food company has used every form of advertising

imaginable—window displays, counter signs, street car cards, novelty advertising, jobbers' sales contests, newspaper ads, a prize contest for the public, retail dealers' special deals, premiums, etc.

Among the most effective and beneficial it counts its \$1,250 prize contest because it not only made actual sales, induced consumers to try the vinegar but flooded the company with information about the uses of vinegar which it never heard or dreamed of before. It also identified the package through a special oval shaped tag, which is hung over the neck of the bottle. The contestants were required to send one tag with every suggestion.

Among the many recipes submitted were some for the use of vinegar in pies, cake frostings, countless new salad dressings and last but not least its use for medicinal purposes. So forceful and effective was the latter suggestion

that it resulted in one of the largest drug chains featuring this vinegar and making a special drive on it. Results were highly gratifying and a new outlet for a pure wholesome vinegar has been discovered.

Starting with a trade marked package product the business developed rapidly, making it necessary to pack bulk cereal vinegar for manufacturers of condiments, who formerly imported malt vinegar from England and Canada.

As a whole the business has been built up slowly, carefully and with due respect to the judgment of manufacturing and merchandising expert familiar with the food industry. Success is easy when the roads are paved with knowledge founded on experience. It matters not whether one makes vinegar, macaroni, malt sirup, preserves or breakfast foods in a brewery plant as long as one knows how to make it right and where to sell it properly.

# \$1250 in prizes!!

A pint and a quarter for only 25c

## 134 prizes for the best recipes using this new and better vinegar—

# Peer-ko Cereal Vinegar

A Better Vinegar Made from Grains



**Look for the Oval Tag**  
The orange oval trademark on the label and the orange-colored tag on the neck of the bottle identify the genuine Peer-ko Cereal Vinegar. Look for the oval tag!

**WE** want every woman who reads this announcement to try it at once, and we are making you an unusual inducement to do so.

We offer a cash prize for the best recipe using this remarkable, new and better table delicacy. There are 134 prizes, a total of \$1250 in cash. You have the same chance as any other woman, your own favorite recipe may win the very first prize.

**Housekeepers' Club Committee as Judges**

The Housekeepers' Club of Pittsburgh has highly honored Peer-ko Cereal Vinegar by appointing a committee of five local women to act as judges in this great contest, thus assuring fair, impartial decisions. This committee is composed of Mrs. Clara Johnson, Chairman, Mrs. Barney Potter, Mrs. Jos. C. Heckman, Mrs. A. G. Swadner, and Mrs. B. D. Scott, all members of the Housekeepers' Club, a progressive organization devoted to the best interests of the Housekeepers.

**\$1250 in Prizes**

**134 Prizes**

First Prize.....\$200  
Three next best, each.....\$100  
Fifty next best, each.....\$50  
Ten next best, each.....\$25  
Fifteen next best, each.....\$10  
One hundred next best, each.....\$1

**How You May Enter**

**Read Carefully**

To become eligible in a contest, you must send to the oval tag found on every bottle with the description of your recipe. You are entitled to one recipe with each tag. Write carefully and full address—write on one side of paper only. Address: Peer-ko Food Mfg. Co., Room 3142, Bridge Street, Pittsburgh.

**NOTE**—All recipes must be postmarked not later than May 15 to be eligible.

**PEER-KO PRODUCTS**

Give names no more than 100 to get their supply from any jobber in the community. If your grocery dealer carries you, ask him to get Peer-ko Cereal Vinegar for you at once, or write us direct and we will see that you are supplied. Address: Pittsburgh Office of Peer-ko Food Mfg. Co., 314 Bridge Street, Pittsburgh, Pa.

#### A better vinegar made from grains

Newspaper advertisement announcing unique contest featuring the new vinegar



# The Present Status of Nutrition\*

## The Fat Soluble A Vitamine and Recent Discoveries Regarding This Accessory Food Factor

By VICTOR K. LA MER, Ph.D.

Department of Chemistry, Columbia University, New York

THE credit for discovering that substances other than proteins, fats and carbohydrates are necessary for satisfactory nutrition belongs most properly to Prof. Gowland Hopkins, of Cambridge, England. Hopkins proceeded in the following way: To one group of white rats he fed a synthetic mixture of carefully purified protein (casein of milk), fat (lard), carbohydrate (cane sugar), and a mixture of mineral salts. Though this mixture was very similar to what chemical analysis had shown to be present in milk, the rats failed to grow, instead they languished away. To another set he fed the same diet but furnished a thimbleful of fresh milk in addition for each rat. They grew normally. In order to prove that it was the fresh milk and not the individual variation among the rats, Hopkins on the twentieth day of his experiments discontinued giving the milk to the second group and gave it instead to the first. The group now receiving the milk commenced to grow while the group on the synthetic diet alone fell away as the first group had done previously. This experiment proved beyond all doubt that fresh milk contained an unknown something which stimulated growth.

Like a true scientist, Hopkins did not rush into print, but instead, after publishing only a brief scientific note, busied himself in checking up his results and endeavoring to isolate and determine the chemical nature of this new material. In this he was unsuccessful, and finally after six years' (1912) work he gave the world a full report of his researches on this stimulant or food accessory as he called it.

Meanwhile chemists were busy in other quarters. As far back as 1897, Eijkman had shown that fowls developed a disease closely resembling human beriberi or polyneuritis as it is often called. This disease appears when the diet consists of polished rice, and as characterized by such severe nervous disorders that the bird or person is unable to walk or even stand, yet it can be entirely cured by the simple addition of the rice polishings which were removed in the milling process. These results were confirmed by numerous investigators including Fraser and Stanton, and Chamberlain and Vedder of the U. S. Medical Corps, who showed that an alcoholic extract of rice polishings was highly curative against this disease which was so prevalent among the troops in the Philippines. Later, in December, 1911, Funk, a Polish chemist, obtained a crystalline substance from both rice bran and yeast which he at that time claimed to be pure, and possessing such marked curative properties that as little as 2 milligrams (2-15,000 of an ounce) would enable a paralyzed pigeon to walk in a half hour after its injection. The material was also curative for human beriberi. Funk called this material "vitamine."

### Work of Norwegian Investigators

But the question of food accessories was in the air at this time, for the Norwegian investigators Holst and Frohlich, from a long series of experiments covering the years 1906 to 1912, conclusively proved that the disease scurvy which had plagued mankind for centuries and which was especially prone to occur among troops in war or on shipboard, was not due to any bacterial infection, or to a predominance of salt meats in the diet, but was due to the fact that such foods as lemons, green vegetables and the like were such good antiscorbutics in that they contained an unknown substance which was very liable to deterioration on heating, drying or long storage. It is upon these class-

ical experiments, since confirmed by better ones, that the vitamine theory of nutrition is based. To make a long story short the three unknown substances each of which promote growth and protect the deficiency Xerophthalmia, beriberi, and scurvy are now called vitamines A, B and C, respectively.

Vitamine A is often called fat-soluble A since it is soluble in fats and fat solvents. It is found most abundantly in butter fat, the fats or oils of glandular tissues like cod-liver oil, the growing tissues of plants such as cabbage, spinach, tomato and the like. It is conspicuously absent from the seed oils as cottonseed, olive, and cocoanut oil. All starches, sugars, fish and meats except glandular organs, grains and cereals are markedly deficient in this particular. Prof. McCollum, to whom we owe a large proportion of our knowledge of the distribution of vitamines in nature, says that tubers, and fleshy root foods as a class are relatively poor in this substance. Egg yolk contains it. For a long time lard was considered to be free of this vitamine but later experiments have shown that the diet of hogs has a certain amount of influence in this respect. In fact all of the more recent work tends to show that the diet of the animal furnishing the foodstuff is very important since the animal body does not seem to have the power of synthesising any of the vitamines but only stores or collects them from the plant foods which they themselves eat.

### Generalized Statements Dangerous

A great deal of reserve must be maintained in making generalized statements regarding the vitamine content of any food due to variations between samples or species. A good example is that of maize. Steenbock's experiments (1. Science 50, 352-3, 1919) have shown that eight varieties of white corn contain practically no fat soluble vitamine while yellow corn contains a sufficient amount to permit of normal reproduction in the rat.

The fact that vitamine A is found most often in yellow pigmented materials like butter, egg yolk, etc., has led to the interesting theory that perhaps it was identical with carotin, the yellow pigment, but the consensus of opinion at the present time seems to indicate that this is not true, but that their distribution happens to be much the same.

The effects of a diet deficient in "A" first becomes apparent in the failure of the rat to grow, followed by a decline eventually leading to death. Occasionally, perhaps because the foods may contain a small amount of vitamine which it has been impossible to extract or because the animal has stored vitamine A in its own tissues, the body weight does not fall as rapidly for some time after growth has ceased. This complicating factor is one of the reasons why tests upon the "A" factor consume more time and are more difficult of interpretation than are the tests for the B and C factors. The weakening of the tissues following deprivation of A renders bacterial infection common. This usually takes the form of eye trouble characterized by swelling and later purulent discharge from the conjunctive followed by blindness. Bulley (Biochem. J. 13, 103, 1919) states that this eye condition may be entirely prevented by careful washing with antiseptics so that the trouble without doubt is that of an infection grafted upon a nutritional weakness. That the eye disorder occurs in human beings we can cite the successes of Bloch (J. Am. Med. Assoc. 71, 322, 416, 1918) in curing a malady among the Danish poor closely resembling the one described in rats



by the use of butter or whole milk. Similar conditions have been reported in Japan and more recently in the clinics in Vienna.

Various writers have attempted to correlate the incidence of tuberculosis, rickets and pellagra with a deficiency in the fat soluble vitamine content of the diet and while their data show that there is such a correlation it has not been shown that it is any more than a contributing factor in these diseases. The well known curative effects of a diet rich in milk and eggs indicates that this substance may exert a pronounced protective or curative effect.

#### Results of Feeding Experiments

Feeding experiments show that codliver oil contains an abundance of A vitamine and at one time lack of A vitamine (Mellanby—Lancet 1,407, 1919 and later papers) was considered to be the unique cause of rickets in children. Later experiments (See Sherman and Pappenheimer—Proc. Soc. Exp. Biol. and Med. 18,193-7 (1921), Hess and Unger, J. Am. Med. Assoc., 74,217-23 (1920), McCollum, et al—J. Biol. Chem. 45,333-348 (1921)) do not bear out this conclusion but lend support to the idea that rickets is probably due to a combination of nutritional deficiencies in which both phosphorus and calcium play an important role with the possibility that there is another vitamine involved which is present in codliver oil. The chief evidence for this view is that codliver oil is a potent antiarchitic agent, while butter, which is known to contain a large amount of the A factor, is a poor antiarchitic agent. The question of rickets is undergoing intensive investigation this year and we may confidently expect to see it clarified in the near future.

As regards the stability of the A vitamine the evidence shows that it is much more susceptible to destruction than was thought a few years ago. On the other hand quantitative experiments showing the degree of destruction in different process of food manufacture have not been carried out to the extent to which they have for the antiscorbutic vitamine. Lack of good quantitative methods and the difficulties encountered in carrying out the present methods are largely responsible for this condition, so that it is not surprising to see that the work of well known investigators frequently conflict with one another. When the conditions of experimentation and preparation of "A" per basal diet have been worked out in more detail so as to render it possible to determine with exactness the amount of food containing A vitamine which will just protect an animal from xerophthalmia or produce a definite gain in weight, it will be perhaps possible to calculate the percentage of vitamine destroyed by a given process as accurately as we are doing at present with the other vitamins by comparing the effects produced by graduated amounts of the processed food with the raw product. For the present then results upon the distinction of A vitamine must be of a qualitative nature.

Osborne and Mendel (J. Biol. Chem. 41, 459-65, 1920) report that one gram of dried tomato, alfalfa, clover, timothy, and spinach were as effective in promoting the recovery and renewal of growth in rats declining on a diet deficient in A vitamine as the same quantity of butter fat. Carrots were a little less satisfactory and cabbage still less so. Potato contains a little A vitamine. With their method they were not able to show any destruction of this vitamine in butter fat on heating, either in the presence or absence of moisture and they believe the contrary results of others are due to failure of the rats to eat all of the food offered them. This view of the stability of the A vitamine is not shared so completely by other workers. In 1918 Steenbeck, Boutwell and Kent (J. Biol. Chem. 35, 517, 1918) published results showing that after butter fat had been heated for four hours at 100 degrees C. its growth promoting properties had disappeared in large measure. One hour's heating caused a distinct lessening of the same properties. Later Steenbeck and Boutwell (J. Biol. Chem. 41, 163-171, 1920) report that autoclaving yellow maize, chard, carrots, sweet potatoes and squash for three hours at 15 pounds pressure (about 115 C) did not produce a marked decrease in A vitamine content.

#### Vitamine A Destroyed by Heat

One reason for these apparently divergent results has been offered by Hopkins (Biochem. J. 14, 725-33, 1920) who finds that the vitamine A in fats is readily destroyed by heating at 120 C. when aerated but that it is stable at this temperature in the absence of oxygen. The vitamine is evidently destroyed by oxidation. Drummond and Coward (ibid. 14, 734-9, 1920) independently have reached the same conclusions and claim that the loss of vitamine under conditions of aeration may be comparatively rapid at temperatures as low as 37 C. Zilva, working in the same laboratory (ibid. 14, 740-1, 1920) also shares this view and claims that ozone rapidly inactivates the large amount of vitamine found in codliver oil.

Recent experiments of the writer, which will be discussed later under the title of the antiscorbutic vitamine, indicate that oxidation is a very important factor in vitamine destruction.

Drummond's remarks on lard are not without interest in this connection (Biochem. 14, 742-753, 1920). He states: "The low nutritive value of lard is believed to be due to two causes. First, the diet usually given pigs in this country (England) is seldom rich in vitamine A, so that the average sample of pig fat contains a little or none of that substance; secondly, the processes of lard manufacture undoubtedly cause the destruction of much of the vitamine present in the original pig fat, probably owing to exposure of the fat to oxygen at high temperature."

Previous work by this same author in collaboration with Prof. Halliburton (ibid. 13, 81-93, 1919) showed that hydrogenation of oils destroyed their vitamine content completely, which confirmed the earlier report of McCollum, Simmonds, and Pitz. Fahrion (Chem. Umschau 27, 97-8) also reports that hardened oils contain no vitamins. Hydrolysis of fats likewise destroys the vitamine.

On the other hand all processed oils are not necessarily vitamine free for Hopkins (Loc. cit.) from a large number of experiments found that ground nut oils and palm kernel oil showed no reduction in vitamine content when purified by the processes used by the Planters' Margarine Company and the Maypole Company.

#### Vitamines in Dehydrated Foods

Except for the work of Osborne and Mendel mentioned above very little has been done upon the vitamine A content of dehydrated foods. Sherman, McLeod and Kramer (Proc. Soc. Exp. Biol. & Med. 18, 41-43, 1920) have shown that the dry heating of milk powders at 100 C. with free access of air destroys the vitamine very slowly, appreciable destruction not taking place until after 24 to 48 hours' heating. They state, "the results thus far obtained emphasize the importance of taking full account of the time as well as the temperature of heating, and of the initial concentration of vitamine in the food. . . ." They make the further interesting statement that skim milk powder contains about one-half the quantity of the vitamine A of the whole product. Many workers in the past have considered that they had had diets practically devoid of A vitamine simply because they have used skim milk in place of whole milk and have neglected to take this point into account in drawing conclusions from their data.

Sherman's results when taken in conjunction with those of Osborne and Mendel would lend support to the idea that the A vitamine is more stable under the conditions of dehydration than (See paper by Falk and McGuire, The American Food Journal, Feb., 1920) it is under the conditions of oil purification. Whether or not this is due to the fact that in the former case the vitamine is in a partially dried condition while in the latter case it is in a condition of more complete solution (oil) remains to be seen. From the standpoint of chemical kinetics it would be logical to assume that the destruction reaction would proceed faster in the oil solution than in the semi-aqueous condition.

**Editor's Note.**—A third article on the subject of "The Present Status of Nutrition" will appear in the September number of The American Food Journal.)



# Maximum Distribution With Minimum Cost

## Rules Which Should Be Followed in Marketing A New Branded Food Specialty

By WILLIAM CRUGER CUSHMAN

Specialist in Food Merchandising Problems

**I**N previous articles in The American Food Journal I have aimed to lead up to the point where a manufacturer with a really worth while product, having arranged a satisfactory price schedule and having worked out all details as to manner of putting up his product, character of labels, size of containers, etc., must decide upon a marketing policy which should prove best suited to his particular requirements.

Perhaps the first consideration is the length of the manufacturer's purse. Assuming that it is ample enough to contemplate a nation-wide campaign and a large initial expenditure to secure a large distribution, there still remains the question as to whether to elect to appropriate a very large amount at the outset for a whirlwind campaign, or to adopt a more deliberate policy of building up a connection by slower degrees.

The advantage of the first method is in the benefit of the cumulative effect of an intensive campaign where the consumer is appealed to so forcefully and insistently that she succumbs and buys. The danger of this method lies in the fact that if for any unexpected reason the campaign falls down, the resultant loss is very great and cannot very well be cut off abruptly. The receptive attitude of the public is difficult to gauge in advance. Many examples could be cited of articles that have received almost instant recognition by the public and that have become popular almost over night, while other articles of apparently equal or greater merit have fallen flat for reasons hard to account for. Of course such an intensive nationwide campaign should not be completed in any event at the outset by the manufacturer with limited capital.

### Begin on Small Territory

It would seem, however, that the wisest and safest policy to adopt by a manufacturer who is not too much obsessed with the "get rich quick" idea is to start his campaign on a new product in a certain restricted section of territory, which can be confined to two or three States, or one state, or one county, or one town. Probably one of the best plans is to select a small section in each of several divergent localities, as for instance, one in New England, one in say New York State, New Jersey or Pennsylvania, one in the south, one in the Middle West and one on the Pacific Coast. A try-out can be made in this way which can be intensive in character without involving any very heavy outlay as a whole, yet which can give a very accurate index of the possibilities of profitable trade development of the product throughout the entire country.

We now come to consideration of the wide range of methods than can be adopted with a view to developing a maximum distribution at a minimum percentage of cost. Generally speaking, the campaign should be divided into two broad fields of operations and outlays—creating a demand for the product, and developing the distributing outlets for filling the demand. Under the first head come all phases of general publicity. These again may be subdivided into newspaper advertising, magazine advertising, car advertising, billboards, illuminated signs, food shows, demonstrations in stores, house-to-house canvassing, circularizing, sampling, and many other methods of bringing one's product to the attention of the public.

Under the second head come all phases of distribution. These may be subdivided into various policies for securing same most effectively, each having its own features of relative advantage, according to the character of the product

that is to be put upon the market. One policy is to put a staff of salesmen to sell direct to the retail trade, invoicing to the retailer and letting the jobber fall in line when the demand from his customers forces him to stock up on the article.

### Many Policies Available

Another is to utilize the staff of salesmen for detail missionary work on the retail trade, taking transfer orders from the retailers and turning same over to the jobbers, with a view to developing a demand with the latter, which can be followed up by the jobbers and their salesmen after the manufacturer's missionary salesmen may have moved on to some other point.

Still another is to approach only the jobbers, depending upon their having felt the demand from the retailers through the general publicity advertising that may have already been done on the product.

Another policy is to appoint some one jobber as exclusive distributor for a given town or radius of territory, giving him certain favored terms which will encourage him to specialize on the product and will, as well, enable him to sell the other jobbers in the town with a certain modest margin of profit.

It is also possible to handle the product through the manufacturers' agents in different sections of territory, paying the agents a commission for handling the distribution that would be equivalent to the saving effected by the manufacturer in doing away with just that many salesmen of his own.

Another policy is to work through brokers in various sections of territory.

The campaign of advertising and the campaign of distribution are so closely interwoven that it is impracticable to consider any phase of either field of exploitation without considering its relation to the other; as well, the nature of the article to be exploited has a strong bearing upon the character of campaign that should be adopted. If it is a branded specialty of individual and unique character and unlike anything else on the market, then the first and main objective is to convince the public that such article meets a need that has never been filled before, and to create the desire to purchase. If the article is what may be termed a staple specialty, or in other words, one of a class of products of which the public is already familiar, then the main effort of the manufacturer is to convince the trade and the public that his particular article has outstanding advantages over its competitors, either in quality or price, or both.

### Each a Law unto Itself

It will be seen from the foregoing that every new product that is put upon the market is virtually a law unto itself, and the problem of its exploitation must be studied individually. In a way it is like a game of chess, where each move must be studied in its relation to the other pieces on the board, and every move must be made with definite objective of forcing a dominating position with the least lost motion—which, in the merchandising world, means reducing the marketing cost and saving valuable time in getting one's product established.

All of which leads to the conclusion that it is impossible to lay down a hard and fast "fool proof" rule for a manufacturer to adopt to assure a successful campaign without first making a thorough study of the individual article that is to be exploited, and shaping his campaign according to



his particular requirements. As a matter of fact, each and every method of exploitation in the field of advertising and in the field of distribution, deserves a chapter of its own in detailed analysis of its relative advantages and disadvantages as applied to the product under consideration. It may not be amiss, however, to suggest a few "don'ts" which I think can be said to apply to any branded food specialty that is put upon the market.

#### Some Things Not To Do

First: Don't start your advertising campaign in advance of your distributing campaign, but let the two go hand in hand. Otherwise, when the housewife calls for the article at her dealer's as the result of seeing it advertised, but finds that he does not keep it in stock, nor can she get it elsewhere, she is apt to lose her enthusiasm and interest and abandon the idea of trying to obtain it. Thus all that preliminary advertising has been virtually lost.

Second: Don't undertake a compromise policy of exploitation. If you elect in any instances to sell the chain stores and department stores direct and accord them special trade terms beyond the ordinary terms to the retail dealer, make the policy uniform, and don't hesitate to admit to the jobbers that you are doing this. Otherwise, don't do it at all.

Third: Don't under any circumstances put any goods

out on consignment or upon "sale or return." Many manufacturers seem to think that because their product has unusual merit, they are safe in putting it out broadcast on consignment, and thus ensure its becoming generally known in the shortest possible time. The fallacy of this theory lies in the adverse mental attitude of the dealer. It stands to reason that if he has on his shelf two articles of a similar character, for one of which he has paid X dollars, and for the other he has to pay nothing unless he sells it, he has every inducement to push the sale of the article in which he has his money locked up and to discourage the sale of the one that has been put in on consignment. Thus the question of relative merits of the two products is sidetracked and the article that has been actually sold to the dealer gets the preference. Furthermore, if an article is once put out on consignment and is subsequently returned for want of a quick and ready sale, it is just that much more difficult to put it in with that dealer later on upon regular outright purchase terms.

This series of articles has not been designed to lay down any infallible method of procedure for a manufacturer to pursue in order to establish his product on the market with maximum results at minimum cost, but rather to throw out a few danger signals and beacon lights which may enable him to steer a course that will avoid the rocks and shoals and lead him safely into harbor.

# Dehydrated Food For Arctic Exploration

## May Revolutionize Provisioning of Expeditions, Says Professor MacMillan

FOOD history may now be in the making, aboard the schooner Bowdoin which is carrying Professor Donald B. MacMillan and his exploring party to the frozen regions above the arctic circle. For Professor MacMillan will have with him as part of his rations when he leaves the ship and starts inland by dog sled enough dehydrated fruits and vegetables to sustain one man six months. Before he set sail from Wiscasset, Me., on July 16, he declared it is possible that dehydration will revolutionize the provisioning of expeditions.

The food which the explorer is to test and report upon was prepared for him by the Domestic Dehydrator Corporation, of New York. It was a product of the De-Hyd-Rite, a moist-air device which the company is now introducing for home use.

Apples, rhubarb, spinach, string beans, raspberries, garlic, parsley and mushrooms comprised the contents of the six and one-half pound box presented to MacMillan. In addition to the fruits and vegetables, a supply of dehydrated eggs was included for the making of omelets. To keep up the morale of the ship's cat, there was a box of dried catnip. The husky dogs which will draw the explorer's sleds were remembered with a quantity of dehydrated grass blades, the tonic qualities of which are known to be valuable.

After MacMillan had received the food and had been informed of its possibilities, he declared that a method of dehydration, scientifically correct, would be a matter of almost limitless significance in his field of activity.

"There has never been a method of preparing fresh fruits and vegetables for a dog sled transportation that has been satisfactory," said he. "Canned goods are obviously out of the question. Their weight and bulk are prohibitive. Consequently, we have been forced to limit ourselves to tea, pemmican and biscuits. While we are aboard ship, we can have almost anything we want. But on the dashes by dog sled, every ounce counts.

"If the rich promises we see in dehydrated food come true under polar conditions, the provisioning of the future expeditions will be a vastly different affair. The discovery of a method of reducing the weight and bulk of foods from 80 to 95 per cent would have a revolutionary effect. I intend giving this remarkable package of food sent me by the Domestic Dehydrator Corporation a thorough test, and will report upon it when I return. It is wholly possible that it will be viewed in the future as one of the most important factors contributing to the success of scientific expeditions."

MacMillan was particularly interested when informed that investigating scientists have stated that the De-Hyd-Rite preserves the anti-scorbutic vitamins in full force and vigor, thereby insuring the effectiveness of its food in warding off scurvy.

The food now speeding northward in the hold of the Bowdoin, represents the most recent refinement in an art almost as old as the world itself. In one way or another, food has been dried for thousands of years. In all the older methods and most of those persisting to the present time, the dessicating agent has been warm dry air. The dry air processes have always been characterized by a rupturing of the food cells, and the loss of a certain amount of color, aroma, flavor and nutritive value. Although they could be readily restored by the addition of water, they fell far short of the excellence of their fresh state.

The moist-air process, which is the principle of the De-Hyd-Rite, does not disturb the structure or contents of the food cells beyond relieving them of their water. Color, flavor, aroma and nutritives remain undisturbed. When the dehydrated food is soaked in water, it quickly regains all the qualities of its fresh state. Food experts and delegations from agricultural colleges who have sampled the De-Hyd-Rite's products served as sauces, pie fillers, soups, hashes, and vegetable courses have regularly failed to detect any difference between them and samples made from fresh food.



# EDITORIAL

## More About the Fight on Milk Compounds

The dairy interests, whose power and influence at Washington are well known to their commercial opponents, are almost savage in their determination to drive all milk compounds from the market.

They are making and will continue to make a desperate fight to amend the Federal pure food laws by the adoption of Representative Voigt's bill known as H. R. 6215.

This measure, as now being considered by the committee on agriculture of the House of Representatives, would classify milk compounds among adulterated foods. The bill reads:

"If in the case of milk, cream, skimmed, condensed, evaporated, concentrated, powdered, dried or dessicated milk, there has been added to the same, or the same has been blended or compounded with, any fats or oils other than milk fats the product shall be held to be adulterated and it would be unlawful to manufacture or sell it in interstate commerce."

The effect of such legislation would be disastrous. It would open the door to a flood of legislation directed against synthetic foods of all kinds no matter how pure or wholesome they might be.

The only case which the dairy interests have been able to prove against milk compounds is that they are lacking in vitamins and therefore should not be used in the place of fresh milk in the feeding of infants. This argument falls of its own weight because such milk compounds never to our knowledge have been designed for infant feeding, but have been advertised and sold particularly for cooking purposes. Moreover, there are many other foods commonly eaten by adults which are poor in vitamins—potatoes, for example, yet there is no outcry against them.

In registering its opposition to this bill The American Food Journal does not for an instant relinquish its advocacy of pure and wholesome foods. There is, however, no deception or fraud regarding the milk compounds now on the market. They are sold frankly for what they are.

While milk compounds are the specific products aimed at in this legislation, yet, if successful, it would pave the way for similar legislation directed against other food products no matter how wholesome and regardless of proper labeling, simply because these products might come into competition with the business of the men who are opposed to them. It would in effect legalize the suppression of a minor by a major industry and thus establish a precedent the economic effect of which would be beyond conjecture.

Protests from many sources against this bill are coming to the ears of the members of the House committee on agriculture. The United Brotherhood of Carpenters and Joiners of New Jersey entered a protest, saying that "the passage of such bills would further curtail the supply of inexpensive and wholesome articles of food and force the workman to the higher priced article or go without."

The Journal of the American Medical Association, a publication fearless in its opposition to foods or drugs which it considers bad, declares that the legislation directed against milk compounds is "without justification from the public health standpoint." Its editorial reads as follows:

"Until within recent years vast quantities of skim milk were wasted or its food value used in uneconomical and unscientific ways. Then there developed an industry for the purpose of making such skim milk more available to the consuming public by adding to it edible fats or oils

from other sources. These milk compounds, obviously, could not and did not take the place of milk as an infant food; they did, however, furnish an inexpensive and valuable food, and because of these qualities they quickly attained public favor. Since they have become popular—or possibly because they have become popular—certain competing interests have attempted to bring legislation which, for all practical purposes, would eliminate milk compounds from the market. More recently such legislation has been pushed in Wisconsin, and the law has passed both houses of the Wisconsin legislature. The fight is now being carried to Congress, and four bills have been introduced which, if enacted, would practically destroy the milk compound industry of the United States. With the trade fight—for such it is—the medical profession is not concerned. Those that are attempting to destroy the business, however, are doing so largely under the guise of protecting the public health. The arguments are fallacious. Such compounds of skimmed milk and vegetable oil as are on the market, so far as we know, are frankly and honestly labeled, and are advertised for what they are. In at least some instances, the label specifically declares that they should not be used for infant feeding, but recommends them for cooking and baking, and expressly defines them as mixtures of evaporated skim milk and vegetable fat. In skim milk we have protein in one of its most valuable forms. If wholesome edible fats of vegetable origin can be added to skim milk and thus make mixtures that are available as inexpensive food or cooking accessories, every consideration of public health and economics favors such mixtures, provided they are frankly and honestly labeled for what they are. The present legislation pending in Congress directed toward the extermination of milk compounds of this character is without justification from the public health standpoint."

Another very important angle in this situation—and one that should appeal to food economists and hard headed business men—is the economic loss which will result if such legislation against milk compounds succeeds. It will make of skim milk a waste product to be fed only to hogs, whereas food authorities agree that skim milk has a well-established food value for human consumption. If the dairy interests make of it a waste product, as they seemingly wish to do, the loss will some day count up heavily against our already diminishing national food supply.

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## Promise of Bumper Crop

Confidence in our economic improvement cannot fail to increase in the light of such favorable reports as the one based upon surveys by the presidents of thirty leading railroads of the country and published during the past month in conjunction with crop summaries by thirteen prominent publications.

Corn is looking unusually well. The poorer cotton situation in view of the cotton held over from last year is looked upon more as a blessing than as a calamity. Fruit and small grain will be plentiful. There has been an abundance of snow and rain in the Western states and all irrigation sections have a plentiful water supply. The livestock and dairy interests are both hopeful.

For the food manufacturers to whom agricultural prosperity means so much, the situation cannot help but renew confidence in the arrival of better days.



# Many Food Products Can Be Made From Peanut and Sweet Potato

By GEO. W. CARVER

Department of Research and Experiment Station, Tuskegee Institute, Alabama

IF there be any astonishment at my combination of the potentialities of the peanut and the sweet potato, let me explain that these two are not as widely separated as may be imagined. They bear a similarity both in the great variety of uses to which they may be put and the appeal which they should have to the Southern farmers, for almost identical reasons.

To begin with, the peanut is a legume, and like all members of the pod-bearing families, has the power to extract nitrogen from the air and deposit it in the soil, thus becoming a soil builder rather than a soil robber, as we may designate all our other farm crops except the pod bearers.

From the nutritive point of view, a pound of peanuts contains a little more of the body-building nutrients than a pound of sirloin steak, while the heat and energy-producing nutrients are more than twice as much.

Some of the constituents of peanuts are proteins, as well as lysin, myosin and amino acids, each and all of which are strong points in favor of more peanuts in our every day menu.

Further, the peanut has probably more water soluble proteids in the nut than any plant with which I am acquainted, together with oils, fats, gums and resins more easily emulsified, and more stable than any others. In addition to these it contains the vitamins in their various soluble forms, giving to the peanut additional food value.

Finally, the clean peanut cake, after the oil has been removed, is very high in muscle-building properties (protein), and in the ease with which the meal and flour blend with wheat-flour, corn-meal, etc., which makes it of especial value to bakers, confectioners and candy makers.

## Sweet Potato Similar

Let us now examine, briefly, the sweet potato and determine our reasons for writing of it in conjunction with the peanut.

To begin with, if all other vegetable foodstuffs in the world were destroyed, a well balanced ration for man and beast could be made from the peanut and the sweet potato and their products.

From the peanut we get the muscle-building proteids, together with fats and oils, and the water soluble and fat soluble vitamins, and from the sweet potato, we take the necessary starches, sugars, gums, etc., heat and energy producers, and the wide range and variation possible in the preparation of menus from these two products, would permit us to live off of them daily and not tire the digestive apparatus through monotony.

Comparable to the peanut, the sweet potato does not draw heavily upon the fertility of our soil. It has been demonstrated many times that more bushels per acre of sweet potatoes can be produced than any other crop grown in the South, and a fair crop of potatoes can be produced on soil on which almost any other crop would be a total failure.

I believe that with judicious advertising the sweet potato can be made one of the great money crops of the world. Indeed, if factories would put up the flours, meals, bisques, breakfast foods, dehydrated potatoes, vinegar, stock foods, molasses, tapioca, etc., in attractive form, the consuming public could not only get the potato, but would know how to prepare it, as it can be prepared, in more than an hundred attractive ways.

## Many Peanut Uses

There are now one hundred and fifty tested recipes for the peanut and nearly as many for the sweet potato, while from the latter there are one hundred and nine different

products derivable, all having a distinct commercial value.

Let us first examine the peanut as food for man.

We find on our list peanut brittle, peanut fudge, peanut cream candy, peanut oil, which constitutes one of the choicest of cooking oils, peanut butter, peanut flour, peanut cake, peanut crackerjack, peanut caramels, peanut butter scotch, peanut kisses and peanut breakfast food.

Under the head of general usefulness, we find peanut hulls, ground, a powder much prized for the scouring and finishing of tin plate, peanut skins for dyes, peanut wood stains, peanut axle grease, peanut oil soap, peanut quinine, peanut linoleum, peanut butter chili, peanut lard compounds, peanut margarin, and finally peanut germs, a by-product from various manufacturing processes which makes one of the most desirable pigeon feeds now on the market.

## Value of Peanut Milk

We next come to one of the most important peanut products—peanut milk. Peanut milk consists of a perfect emulsion of the oils, fats, proteids, carbohydrates and some of the ash of peanuts. It is one of the most perfect and stable emulsions that I have seen when properly made. It can be manufactured directly from the nuts or from the peanut cake or meal.

The following comparison in percentage composition between cow's milk and peanut milk furnish food for thought:

	Water	Ash	Protein	Fiber	Carbohydrates	Fat
Cow's Milk:	87.2	.7	3.6	0	4.9	3.7
Peanut Milk:	7.5	2.4	7.0	7.0	15.6	39.6

Since the quantity of fats, carbohydrates and proteids can be controlled, many different grades of milk can be produced. In other words, it can be made as rich or as poor as desired.

In looks and physical characteristics some of the grades are practically identical with cow's milk, and if one did not know that one was peanut milk and the other cow's milk the eye would never detect the difference. The keeping qualities, I find, are about the same as cow's milk; the less fat and proteids that are contained in it the longer it will keep. When it sours the clabber or curd is about the same in quantity and physical appearance as that of cow's milk. The possibilities of this milk are practically unlimited, but it might be well to mention a few:

Cooking purposes, sweet and sour milk, buttermilk, cream for coffee, cream for ice cream, evaporated milk, fancy fruit punch, Worcestershire sauce, peanut coffee, instant coffee, clear white oil, curds, tofu—a highly flavored peanut sauce.

And among the more astonishing products resulting from the peanut are mock oysters, made from the curds, and a very satisfactory substitute for real oysters; face pomade, ink, a fine blue black ink being derived from the vines, and finally a vinegar.

## Large Variety of Potato Products

Let us examine some of the many sweet potato possibilities, and judge for ourselves how it resembles the peanut in its unusual adaptability. On the list we find four kinds of flour, four kinds of meal, starch, library paste, mock cocoanut, five kinds of breakfast food and gingerized potato, vinegar, ink, shoe blacking, coffee—two grades of instant coffee, chocolate compound, bisque powder for making ice cream, tapioca, fourteen kinds of candies, dyes ranging from jet black and rich orange through all of the intermediate shades—forty-five of them in all, stock foods, rubber, molasses and wood fillers.

Certainly the way is open to the food chemists to discover many more and introduce them into the homes.



# Co-operative Advertising for Margarin

## Manufacturer Urges National Campaign to Educate Public and Sell Products on Its Merits

By B. S. PEARSALL\*

SEVERAL years ago a young man essayed to become a successful writer of short stories. He wrote several and sent them to the publishers of various magazines, only to be sent back. He couldn't understand why, but as he had a friend who was already a successful author, he took what he considered his best story to his author friend and asked him to read it and tell him wherein it was lacking. The successful author did read it, and when the young man called he said, "You have a good story here, but you take too long to get into it. Rewrite the first part of it and start it off with a punch. Don't forget the punch." Later he again submitted his story to his friend to learn whether he had put the required punch into it. His critic found that in the revised form it now started out: "Oh, Hell!" said the Duchess, who hitherto had taken no part in the conversation."

Although some of you may have heard this before, the point of it is none the less pertinent, for the moral or immoral of it is that the time has come for us, as margarin manufacturers, to give our story to the public with more force. We have a good story, an excellent one, but our trouble has been—like the young author—we did not start right.

All industry today is facing big problems. It would be foolish to deny that the margarin industry had none. We have sold margarin as a substitute for butter. When an article is sold as a substitute it has no reason for its existence except to replace the original article. The selling points of such a substitute vary not with the changing conditions surrounding the substitute but with the changing conditions surrounding the original article. If these changing conditions destroy the advantages of the substitute, the reason for the existence of the substitute would be destroyed. Therefore, the sale of margarin as a substitute for butter is affected not by conditions surrounding margarin but by conditions surrounding butter, over which we have no control.

Whenever the price of butter drops below a certain level, our selling campaign is upset. The fact that we have allowed margarin to be sold entirely as a substitute has led the distributor and retailer to believe that it is impossible to push it against cheap butter. It behooves us, therefore, to stop talking margarin as a substitute and sell it on its own merits.

### Why Sell as Substitute

Why should we continue to offer our goods as a substitute for an inferior article? Butter today is poorest in years and now justly criticized. You are familiar with the facts, but I will briefly report:

The Chicago Dairy Produce of October 26, 1920, says, "The creamery butter made in this country in 1919 was 875,000,000 lbs. Only 5 per cent are extras. As we improve quality, we improve demand. It costs no more to make extras than it does a lower grade; and there is a very wide difference between returns on extras and the other grades. It is surprising that so many factories can go on producing the poor quality they sent to the markets."

And remember, this is quoted from a dairy paper.

I am not here, however, to recite the history of the past, nor to mourn over the sins that may have been committed in early days. But I think of them that I may the more pointedly bring to your attention the reason we are here

and why I so sincerely believe the time has come to put margarin on a foundation of its own, that it may be considered by the public on its own merits and as a substitute for nothing.

If you will carefully think it over, I believe you will recognize that about all of us have had our noses too close to the ground, that we have each sought to manufacture and sell our own brands of margarin by the means that struck us as best for what markets we could most easily reach, and have let the future of the other fellow take care of itself.

Public opinion as a whole none of us have given enough thought to, nor sought in any general way to overcome the handicap that has more or less throttled the margarin business from the start and curtailed its sale by good will. And public opinion and public good will are the biggest factors of all in the marketing of any product.

It seems to me that the question confronting us now is not so much one of manufacture, but it is one of public opinion for the product called "margarin"—any brand—all brands. The black eye that it has had since infancy must be healed, the "substitute for butter" idea that surrounds it must be eradicated, a positive idea of its real merits must be conveyed to the public and a twelve months in the year market established for it, on its food value merit.

### A Prejudiced Market

When the average manufacturer starts to build up a good-will and a market for his product, he has little to contend with in the nature of concrete prejudice against him. His chief concern, after admitting the ordinary trade difficulties of getting to his market, is competition. But we margarin manufacturers have not only competition among ourselves and the competition of the butter manufacturers, but have a market already prejudiced against us. You will see, therefore, that that prejudice is the chief thing to eliminate, for once it has disappeared, we will be in the same category as any other manufacturer who has a commodity for sale which people want and will buy of one or the other who make it.

It isn't that people do not want margarin. It is too evident that they did or many of us would not have had the success we have had. But they do not want it when butter is cheap nor want it in the quantities they should want so good an article the year round. On account of a bad beginning margarin is looked upon as something queer—something that is in a way outlawed. If butter is bad, the one eating it suspects at once that it is margarin.

Undoubtedly you are familiar with the conditions in some of the largest butter producing centers. Thousands of cans are daily exposed to the sun on the receiving platforms. Cans are constantly exploding. The stench from this rotten cream is stronger than that of the stock yards. Yet butter is made out of this putrid cream.

Attorney General A. Mitchell Palmer, in his report to the Bureau of Internal Revenue, December 31, 1920, ruled that all butter made from neutralized cream was adulterated. Yet today some dairy schools are teaching their pupils to use as a neutralizer, limewater, sodium bicarbonate or even saltpetre, to cure decomposition.

Statistics show that 80 per cent of the butter is made from neutralized cream—therefore, 80 per cent of all butter is adulterated and all dealers taxable and every package should be labeled, under the law the butter men passed

\*Paper read at convention of Institute of Independent Margarin Manufacturers at Atlantic City, June 3 and July 1.



themselves. If the butter people were subjected to as rigid inspection as we are forced to, they might turn out as good a product. We know that margarin as manufactured today has a better flavor than most butter. We know that margarin as manufactured today has better keeping qualities than most butter. We know that margarin as manufactured today is more uniform in grade than most butter, but margarin will not take the place it is entitled to on the American table until we sell margarin as margarin on its own merits.

#### Advertising Has Lacked Courage

Our advertising has lacked originality and courage. It has lacked an appealing motive to the housewife to choose margarine, only when butter is very scarce. Our advertisements have carried an appeal to use a certain brand of margarin, but they have not asked the housewife to try margarin as margarin. In our feverish competition against each other, we have belittled ourselves in the eyes of the grocer. In our eagerness to give our goods away we have cheapened them. Our problem is to correct these mistakes of the past and to tell the public the truth about margarin. We must tell the farmer that the manufacture of margarin is beneficial to his interests instead of detrimental as some of his friends try to show him. We must tell the housewife that margarin is uniform in quality, flavor and aroma. We must tell her that margarin keeps as well in summer as in winter. We must tell her that margarin contains as many vitamins as good creamery butter. We must tell the public that they are wrong in calling poor butter found in restaurants and eating places margarin. We must tell the public that according to bulletins Nos. 310, 505, 613 of the United States Department of Agriculture, the digestibility of a good margarin is at least as high as that of creamery butter, and according to bulletin No. 469 that margarin as a source of energy stands higher in food value than creamery butter.

We must tell the public that margarin is made in sanitary plants under strict Government inspection, that only pure and high grade materials are used, that every pound of milk is pasteurized, that every employee is dressed in clean white uniforms, that margarin is not touched by human hands, that every utensil is sterilized every time it is used, that the walls, ceilings and stairs are cleaned daily, that all windows in our plants are screened, methods unknown in most creameries.

We must tell the public what Dr. Abbott said in his complaint to the Secretary of Agriculture, namely, "That county agents who urged women not to use oleomargarine are financed in whole, or in part by State and Federal appropriations," in the interests of the most entrenched monopoly in America—kept alive only by paid lobbyists.

Mr. John Phillips Street, associated with the National Cannery, and well known among food experts, said in *The American Food Journal*, March, 1921, "A high grade oleomargarine is one of the purest, most carefully manufactured food products on the American market today, infinitely purer, cleaner and more desirable in every way than most of our butter. The tragedy of the situation is that because of the initial unwillingness of the oleomargarine manufacturers to introduce the product on its own merits, the industry was in a large measure founded upon deceit, and oleomargarine received an ill name among consumers which even now is slowly being cast aside. This early deception aroused the antagonism of most pure food officials and gave the dairymen an excellent talking point against their formidable rival."

#### Must Educate the Public

It is up to the margarin manufacturers of today to show the public that the margarin industry is not conducted upon deception, that margarin is not deserving of an ill name and to show pure food officials and dairymen that the margarin industry is not deserving of their antagonism, nor are we afraid of honest legislation while the butter men are. It is up to margarin manufacturers of today to show the public that such expressions as "imitation butter," "artificial butter," "imitation of butter made from animal oil" are misleading.

It is up to the margarin manufacturers of today to show that margarin is not a substitute, but rather a product made from fresh pasteurized milk and wholesome animal fats or vegetable oils.

Now, much of this prejudice, if one goes into the psychology of the human mind, is not born of any good reason. It is rather from what may be termed notion—a notion acquired from the early misdeeds of the margarin retailers. And, if one studies the history of public belief and public policy, it will be found that the public mind is governed much more by notions than by reason. The history of religions and politics is full of bitter prejudices and violent public opinion, induced not from calm, cool reason but from a notion. And such notions not only spread, but they enlarge, as they spread, until in the case of margarin, there are many people, I believe, right in this so-called intelligent twentieth century, who have a vague idea that margarine is something evil, the product of smugglers or free booters and that it is some sort of crime to buy it or eat it. I may seem to be spreading it on thick, but if I had the time I could cite you enough true incidents to prove that what I briefly refer to is a fact, and it is a fact that faces us.

#### Other Co-operative Advertising

Margarin, however, is not entirely alone among food products that need more public good will to bring a greater consumption and to remove this public prejudice against it. There are many cases I could cite of combinations of food product manufacturers and growers making a co-operative effort to establish on a larger scale, a market for their goods, such as the California Raisin Growers, The California Orange Growers' Association, The Citrous Fruit Growers' Association of Florida, The Wooden Box Association, and various others. None of these, to be sure, had any public prejudice to contend with at the outset nor at any time that I know of. Everybody liked oranges, even before "Sunkist" or "Sealdsweet" were advertised, and every one used some wood boxes. But at that, the advertising that these and similar associations have done has enlarged the sale and market of their product tremendously. However, there has always been a prejudice against canned goods. It is the same sort of a prejudice that exists against margarin, and it is detrimental to the sale of any brand of canned goods, although the Government does not penalize the canner by a tax as it penalizes our industry.

There is a common belief that ptomaine poison lurks in the tin can. Ordinarily intelligent people hold as queer superstitions about the ptomaine in canned food products, as the people of the middle ages held about witches and charms and as we know they hold about margarin now. They consider tin something deadly, when as a matter of fact, tin is not poisonous nor does it create any poison when in contact with the vegetable or fruit acids. Another public notion is that if a can of fruit is opened, it is considered dangerous to allow the unused portion to remain in the tin, it must go in glass at once. Pure bunkum so far as the tin is concerned as any chemist can testify, although any fruit, canned or fresh, when exposed to the air, is bound to eventually rot, and it is as dangerous to allow it to rot in glass as in tin. I will not take your time to go into this cannery situation in detail but I am citing one or two of these beliefs relative to it to show by comparison, to what extent the public prejudice runs when it gets a notion. If the public did not hold such notions about canned foods, there would be a far greater market for canned foods than at present, even large as it is. But it takes time and propaganda and money to get the public to know that the deadly ptomaine poison is nothing but a state of putrefaction, which is more ordinarily likely to occur in so-called fresh foods than have been allowed to stand and spoil, than foods that have been cooked and canned when perfectly fresh and sealed in air tight containers. And because of these queer public prejudices the canners of the country have formed the National Cannery Association and have inaugurated an extensive advertising campaign to educate the public. For these reasons, so



briefly touched upon here, I believe that the canner's situation bears the closest analogy to ours, and from it we may learn much. But regardless of the closeness of the analogy when it comes to public prejudice, canned foods, while they compete with fresh foods, are not and never have been considered a substitute for them.

#### Urges Concerted Action

Let us look upon our problems from the standpoint of the margarin industry and not from the standpoint of any selfish interest. We have suffered because of our attitude toward each other. Let us be more helpful. Our most disastrous competition is the competition of the men who are turning out the poorest piece of goods. Let us organize to show all manufacturers how to make good goods. Let us see how much we can do to make every brand of margarin worthy of sale.

Any concerted action on our part will not only increase the national consumption of margarin but will stimulate our own organizations; will put renewed energy into our distributors; and will show the retailer that margarin is a line worth pushing.

Other industries have faced the same problem and answered it successfully. I quote from page 89, May 26th issue of "Printer's Ink." "The Rice Millers' Association of America declared that the short intensive advertising campaign which had been undertaken a few months ago had tripled the consumption of rice in the United States." "The advertising plan as carried out created a feeling and spirit of co-operation among the greatest number of jobbers and retailers throughout the country, and as a result rice has been placed on a proper cost-to-the-consumer basis. The science of cooking and the proper uses of rice will be brought home through the domestic science work that will be carried on through the schools and other educational channels, thereby creating a permanent demand."

In the February, 1921, issue of The American Food Journal, Mr. H. C. Coykendahl, general manager of the California Prune and Apricot Growers, Inc., San Jose, Cal., says: "Our association has in preparation the most effective advertising campaign ever prepared for a product of the soil. This will be combined with all sources of publicity work, with the end in view of extending and developing 'Sunsweet Prunes.' National women's magazines, daily newspapers, trade papers, booklets, pamphlets and other educational mediums will be utilized to extend the consumption of prunes in every possible form during the next five years. We are stabilizing and developing the industry and are creating a present and growing market in prunes." I quote from the issue of March, 1921, of The American Food Journal: "The California Associated Raisin Company, Fresno, California, in announcing a newspaper campaign for 'Sunmaid' raisins, says it has launched the largest newspaper campaign ever attempted for any food product."

To sum up, we in the margarin business have the negative side of the question. We are on the defensive. We plead that we are "just as good as," which, when it is analyzed, is the weakest sort of an argument for any product of any kind whatever. We are considered not only a substitute for butter, but the butter market determines our market. We are a substitute, a trailer and have a dark past to overcome.

Conceding that the prejudice against margarin, acquired by those dark days of its youth, can be wiped out—and it can be—there still remains the competition of butter. Isn't it about time that the public was told? The public, as I have indicated before, is an element of delicate mechanism. The notion it acquires will swing it one way or the other on the least provocation. A mob will want to hang a man one minute and want to proclaim him a hero the next, all according to just how its feelings have been swayed—not reason, just notion. So I believe that once the public gets the truth and gets it firmly established, that butter, as it is generally marketed, is not what it has proclaimed itself to be for all these generations, it will switch to margarin, and the butter manufacturers will have to prove their product before they can sell it with any degree of satisfaction and the public believe in it.

#### Purge the Market of Poor Butter

If you will think the matter over you will recognize that even the most scrupulous of you can have no objection to purging the market of poor butter. And if it develops that in doing so, we profit, there is no harm in that. In fact we have ample precedence, for did not a man, some years ago, manufacture a substitute for coffee and expect to get rich by it? He almost went broke and nearly broke his advertising agency as well, until some one—the agency or himself—tried another angle and marketed his product, not as a substitute for coffee, but as Postum and threw the fear of coffee into the midst of the people. When C. W. Post died a few years ago he was a multi-millionaire. Coffee may be injurious. I do not argue it one way or the other here. But Post made the public think it was injurious, and the answer was returned to him in millions.

But whether coffee is injurious or not, coffee as such, is coffee. And butter is butter when it is properly made, but it is not butter by a long ways, as you get it now in your hotel, club or home—or not more than five to ten per cent of it is. And if it were only that five or ten per cent we had to compete with, the margarin business of the country, yours, mine and the next man's would be plenty and there would be no need for us to figure on ways and means, and no one would be ashamed to tell a true story, not of dark nights and lonely spots and masked men, turning out some weird concoction that everyone seems to disbelieve in, but a story of daylight factories, clean utensils, pure and whole. Some ingredients and all supervised and inspected by U. S. Government agents, that creameries do not dare submit to.

But I am not advocating that such a story be told in any courts or in the lobbies of the National Congress. I believe both in our courts and in our legislative branch of the Government, but I believe to a still greater extent in our greatest court of all—the people of the United States. In the end, the people are the last court. All other courts and all other branches of the Government go to the people eventually. And, to paraphrase a well known advertiser's slogan, "Why don't we go there now?"

To my mind, the only way to establish ourselves and our product and gain the good will and confidence of the American people, is by advertising. Yes, we are advertising now, most of us are. But so are the canners—Heinz, Van Camp, Snyder's, Burnham & Morrill and many more. But individual advertising is not collective advertising. When we each advertise our own brands of margarin we have sought only one end—to make a temporary sale of our brand and some of us may be surprised at repeat orders. We have sought in a very little way to establish the belief that all margarin is good and pure, that it is a food product to be considered on its own merits, whether high or low in price. And even in our own ads we have said of our own product from time to time that it was "as good as butter" and perhaps cheaper. We have individually trailed in on the butter idea and on the butter price and the butter market. We have been a substitute. Even in our own minds and in our ads. We have not institutionalized our industry at all. That is why it is in the position it is at this moment—a drop in the butter market, and away go our sales on margarin. The advertising I have in mind is not the sort that we have been doing in an individual way up to now. The advertising that I believe would tear down the old prejudice against margarin and margarin manufactures, establish margarin as a legitimate and wholesome product on its own merits and create a larger and a twelve months' market for it, would be a matter of plain, simple facts and each fact with a punch, that no one could contradict. I would use magazines and newspapers that were best suited by locality and character of circulation to carry the message, and I would tell our story over and over again, almost in words of one syllable, so that he who runs might read—and understand and believe.

#### Preach Purity and Economy

Such advertising would not need to be vicious, although it would not be defensive in any way. It would, or should be, simple and educational, and preach purity and quality as well as economy, so that eventually the word margarin



would be a synonym for a food product that was all that was wholesome and good and economical. That goal can be reached, and reached sooner than most of you would suppose. All we need for that is advertising, and the good will and the market that it will surely bring us is money.

I am not prepared to say off hand just how much money would be needed, but I would suggest that the public's memory is short and any great expenditure at once, no matter how great, would not fulfill its purpose nearly so well, as that same great expenditure extended over a period of several years. For it must be remembered that it has been many years that the public has held our industry in the light it now sees it, and that it will take time as well as force and argument to rearrange its line of thought. And I would rather that the Institute did not go into this at all than see it make a great advertising splurge for a limited period. Such a campaign would be like the McCabe legislative blunder, only stir up the butter interests and do us more harm than good. Continuous persistency is what will win for us.

To raise that money is not my province, although I would suggest that it be done along the same line as other co-operative efforts have found best, that is, on a pro rata of the tonnage of the various manufacturers, so that the burden will be shared in proportion to the benefits received, say at some fraction of a cent per pound.

Other industries have put across successful educational campaigns. If the Institute would authorize a committee,

if it would back this committee up by a financial budget, if this committee would put across an educational advertising campaign; if all these things were done, we would compete with each other instead of against each other—we would destroy the prejudice and ignorance now surrounding the margarin industry—we would gain the confidence of the public and we would place margarin on the market as a product and not as a substitute.

#### Calls for Action

You may agree that what I have said is fine and we ought to do it, and then talk and think about it, but what we must do is act on it. Now is the time if it ever was. The fact that butter is low in price and there is plenty of it, rather accentuates the need of acting now rather than waiting until we have a better market of our own, but when that comes, in the usual way by trailing the butter market—a good many will be busted or lost interest in any general campaign and seek to be content to plod along in the old way. But I do not want to plod along in the old way. It is time to act and act with vigor and force now, and our Institute can handle big things and I bespeak your consideration of this question to some definite conclusion at the earliest possible moment, to the end that margarin be made a word of praise and purity in the minds of all, just as it is now, without the public's really knowing it, a food of goodness and wholesomeness in the stomachs of all who are sensible enough to eat it.

## The Food of the Ages

By FRANK SIMONDS

President California Olive Association

PROBABLY not one person out of a hundred could give the name of the fruit tree that attains the greatest age and has been cultivated for the longest period, and yet this double record of longevity belongs to the olive, now grown commercially on the Pacific Coast for the production of ripe olives and olive oil.

As near as can be ascertained from records consisting mainly of allusions in ancient literature, the olive tree has been cultivated for more than 4,000 years, and we know of one tree from the Garden of Gethsemane that is over a thousand years old.

Its home seems to have been in Southern Central Asia, where it was first domesticated and improved by the Semites, later being taken into Greece, and carried by the wandering seamen of Phoenicia to Carthage whence it was borne by traders into Spain.

The old testament contains numerous references to the olive, among the most frequently quoted of which is that in Judges IX, 8-9, "The trees went forth upon a time to anoint a king over them, and they said unto the olive tree, Reign thou over us. But the olive tree said unto them, Should I leave my sweetness and my oil wherewith by me they honor God and man, and go to be promoted over the trees?"

In Homer's time, the ninth century, frequent mention is made of the olive, there being indications of its culture on the Ionic coast and islands in the latter part of his book. In fact, the name of the island of Samos is to be translated, "planted with olives." Later, Heroditus tells us, Athens became the centre of Grecian olive culture.

In Italy according to Pliny, the olive was not introduced until 627 B. C., later appearing in Gaul, now France and Spain, in 600 B. C., carried there by the Phoenician colony that founded Marseilles. On the southern side of the Mediterranean it was cultivated by the Tyrians. Finding it in Tyre the Arabs carried it into Spain when they settled there.

The Spaniards in turn, many years later introduced it into Chile, Peru and Mexico, from which latter country it was brought by the Jesuits into Lower California, and then by the Franciscans, who superceded them, into the present State of California, where there are now forty thousand acres under cultivation.

Thus as one writer has said, "Civilization's march is westward . . . ; so is that of the olive. The civilized man and the civilized olive have both left their primeval home and migrated from Palestine to Egypt and Greece, thence to Rome and western Europe, thence finally across the water to America—always the best olives with the best men."

#### Montana Passes Three Food Bills

The Department of Health of the State of Montana has issued a bulletin, noting the passing of a number of laws relating to public health, three of which are of interest to food interests.

One of these is an act providing for the regulation of the sale of eggs, providing for the classification and labeling of eggs displayed for sale, and providing penalties for the violation of the provisions of the act.

The act also provides for the proper labeling of all foreign eggs as such, and all restaurants, hotels, cafes, bakeries, etc., must inform their patrons by a sign that they use foreign eggs. Finally, all cold storage eggs must be labeled.

Another bill prohibits the manufacture or sale or the possession with intent to sell of any article of food containing saccharin.

A third act has to do with licensing, and is an act to modify a section of the laws of 1911, dealing with the provision of licenses for public eating places, bakeries, confectionaries, meat markets, canneries, ice cream parlors, soft drink establishments and bottling works and regulating the fees to be charged for the licenses.



# FOOD NEWS FROM WASHINGTON



## Wholesale Grocer-Packer Dispute Settled

### Interstate Commerce Commission Hands Down Decision Interesting Large Number of Firms

Washington Bureau  
The American Food Journal,  
622 Albee Building

SEVERAL questions which have long been matters of dispute between wholesale grocers and the packers are settled by the decision handed down by the Interstate Commerce Commission in the complaint of the National Wholesale Grocers' Association. The right of the packers to load certain articles of groceries in their peddler and branch-house cars is upheld by the decision, and the various peddler-car rates and rules are held not to be unreasonable with the exception of certain rates in southwestern territory, but the rules applicable on mixed carloads of fresh meats and packing-house products are found unjust, unreasonable and unduly prejudicial and reasonable and uniform mixing rules are prescribed for the future.

While the original complainants in the case were the National Wholesale Grocers' Association and the Southern Wholesale Grocers' Association, a large number of packers and dairy interests intervened, among them Armour & Company, Wilson & Company, George A. Hormel & Company, Kingan & Company, Morris & Company, Interior Iowa Packers, North Texas Wholesale Grocers' Association, South Texas Wholesale Grocers' Association, Arkansas Wholesale Grocers' Association, Magnolia Provision Company, Oklahoma Wholesale Grocers' Association and Missouri-Kansas Wholesale Grocers' Association.

#### Complaint Filed During Federal Control

The complaints were filed during the period of federal control. In substance each alleges that the schedules and practices of the railroads are unreasonable and afford to the meat-packing industry, and particularly to the larger meat packers, undue preferences and advantages in the transportation service accorded to shipments made by such packers, and in the rates, rules and regulations applicable thereto, and result in undue prejudice and disadvantage to the wholesale grocers and jobbers with respect to articles in which both the meat packers and wholesale grocers deal.

The complainants contended that by shipping unrelated articles in the packers' peddler and branch-house cars with fresh meats and packing-house products, the packers obtain more speedy transportation and more prompt delivery than if such articles were shipped by them through the carriers' freight houses in the regular merchandise cars ordinarily used by the wholesale grocers and jobbers, and that the

carriers unjustly discriminate against the wholesale grocers in their failure to maintain less-than-carload refrigerator service to many points which are served by the packers' peddler cars. The commission was asked to forbid the shipment in the packers' peddler cars of commodities which are not the products of slaughtered animals.

#### Solution Proposed

During the hearings, the counsel for the National Wholesale Grocers' Association proposed as a solution of the controversy that all articles other than fresh meats and packing-house products should be excluded from the cars handling either carload or less than carload traffic in fresh meats and packing-house products; and, further, that the various lists of fresh meats and packing-house products now prevailing in the tariffs of the carriers throughout the United States should be revised and made uniform by excluding therefrom the following commodities: mince-meat, canned meats with vegetable ingredients, lard substitutes and lard compounds, canned soups, soap, and butter substitutes, when such articles do not contain more than 20 per cent beef, pork or mutton ingredients; also butter, renovated butter, cheese, eggs, canned chicken tamale, canned spaghetti-meat chili, canned pork and beans, cottonseed cooking oils, peanut cooking oils, soya-bean cooking oils, and corn cooking oils.

#### Discuss Use of Peddler Car

The complainants contended that the peddler cars are handled more expeditiously than are the merchandise cars available to the wholesale grocer, and therefore the wholesale grocer is placed at a serious disadvantage when his competitor, the packer, currently includes in a peddler car grocery items which do not require refrigeration, and which are not the products of the slaughtered animals. They contended that shipments in peddler cars avoid practically all the delays to which the grocers' shipments in the merchandise car are subjected because of congestion in local freight houses or en route, transfer at break-bulk points, inadequate car supply, set-outs en route for unloading necessitated by large consignments destined to particular points, and shipments being held at freight houses to accumulate sufficient tonnage.

The intervening packers contended that the decree of February 27, 1920, under which not later than February 27, 1922, the large packers and their subsidiaries must cease to deal in practically all of the articles in which they



compete with the wholesale grocers except cheese, lard compounds and substitutes, peanut butter, butter substitutes and soap, will eliminate the competition to which the grocers object and will bring about a result more favorable to the complainants than any obtainable by an order in this proceeding. This was denied by the National Wholesale Grocers' Association, as the independent packers, not being parties to the decree, are unaffected thereby.

#### Food Transportation Data Submitted

Both sides submitted data regarding the transportation of food products involved in the case, which showed that in many instances the shipments of wholesale grocers received the same treatment as those of packers, while they were not put to the expense that the packers were for icing, etc. "It seems clear that the merchandise car and the packers' peddler car or branch-house car move in the same trains," the commission said in its decision, "and that the principal delay occasioned to the shipment of the wholesale grocers is due to the manner of handling their shipments through the carriers' freight houses. They now have available the station-order car which is similar to the packers' peddler car. If this car were availed of in the same manner, and to the same extent, as the packers' peddler car, it is not seen in what way complainants would be prejudiced.

"While we do not think that the record warrants any such sweeping and drastic order as is sought by complainants, there are several situations in need of correction and which will, when corrected, go a long way

toward satisfying the grocers' grievances. The mixing rules on fresh meats and packing-house products should be revised and made uniform. We agree with the complainant's contentions that lard substitutes, lard compounds and canned meats with vegetable ingredients in excess of 80 per cent of the weight thereof should not be included in the mixing rules.

"Upon consideration of all the facts of record we find (1) that the practices of defendants in permitting the meat packers to load certain articles of groceries in their peddler and branch-house cars is not shown to result in undue prejudice to complainants or unduly to prefer the packers; (2) that the various peddler-car rates and rules are not shown to be unreasonable or unduly prejudicial, except that the mileage scale of rates applicable on packing-house products in peddler cars in southwestern territory is unduly prejudicial to complainants and unduly preferential of the packers in so far as said scale of rates applies on lard substitutes, cottonseed cooking oil, peanut cooking oil, corn cooking oil, soya-bean cooking oil, canned meats, canned soups, chicken tamale, chili con carne, spaghetti-meat chili, and canned meats with vegetable ingredients; (3) that the various mixing rules governing fresh meats and packing-house products, in carloads, are unjust, unreasonable and unduly prejudicial, and that reasonable and nonprejudicial rules to apply for the future will be those suggested by the packers in this proceedings, except that lard compounds, lard substitutes and canned meats with vegetable ingredients in excess of 80 per cent of the weight thereof, should be excluded therefrom.

## Dairy Interests Will Press Filled Milk Legislation

The disposition of the tax and tariff measures which are now before Congress will be the signal for the inauguration of the dairy interests' campaign for the enactment of legislation dealing with filled milks, and pressure will be brought to bear upon the House for the passage of the measure written by Representative Fordney, of Michigan, chairman of the Ways and Means Committee, following a hearing held by the Committee on Agriculture in June.

The Fordney bill defines filled milks and provides for taxes upon dealers therein, as well as upon the milks themselves. The measure is similar to those introduced by Representatives Beck and Voigt of Wisconsin. The latter's bill would prohibit interstate commerce traffic in these compounds.

No hearings have yet been held on the Beck or Fordney measures, but at the hearing before the agricultural committee in June on the Voigt measure a number of nutrition experts appeared, including Dr. E. V. McCollum, of Johns Hopkins University, who repeated in substance his testimony in regard to State bills dealing with this question, which appeared in the July issue of *The American Food Journal*.

#### Arraigns Filled Milk Industry

The filled milk industry was severely arraigned by Congressman Voigt, in opening the hearing. The industry is growing "at an alarming rate," he said, and "is adulterating the milk supply of the country." The business has grown 5,000 per cent in five years and is now a menace to the milk supply of the country "and if it keeps on in a few years the bulk of the canned milk that will be sold in this country will be the so-called filled milk."

The congressman charged that any fraud that is practiced in connection with the sale of these compounds is not on the part of the manufacturer, who labels his product in compliance with the law, but by the retailer who sells them as milk. He charged also that, despite testimony to

the contrary, it was being used for the feeding of infants and that the Army and Navy both had purchased compounds under the impression that they were buying condensed milk and had continued their use until attention was called to the fact that the goods in stock was not a condensed milk but a compound.

#### Scores Lack of Food Value

Answering questions following his direct testimony, Representative Voigt made it clear that his only objection was the sale of compounds for uses to which they are not fitted. "I will say to you gentlemen that there is nothing poisonous or deleterious in this milk compound," he said. "I will say further I do not object to what this compound contains so much as I object to what it does not contain. The fact that this article is not deleterious or is not poisonous does not meet the argument. This substitute does have a food value, but the main defect in it is that it has not the food value which is necessary for the growth of children and infants. The trouble is that this article is sold for milk and is used for milk, when it does not have the same nutritive elements that milk has, and it is sold notwithstanding the label, in such a way as to perpetrate a fraud on the consumers of the country.

"Another thing I would like to mention is that there are probably seven or eight people in the country making this substitute. There are a great many concerns making honest evaporated and condensed milk. Those men can not compete with this article, and if a stop is not put to the manufacture and sale of this imitation we will find that all the manufacturers of condensed and evaporated milk in this country will be driven, as a matter of self-protection, to making this substitute, and you are going to injure the entire milk industry of the country."

Owing to lack of time, representatives of the milk industry were not heard, but were assured by the committee that another hearing would be held later at which they will be given an opportunity to testify.



# Industries to Co-operate in 1921 Census

## Value of Production and Consumption Statistics Pointed Out With Reference to Tax and Tariff Questions

Washington, D. C.—Representatives of the canning and other industries attending the special meeting held on July 29 under the auspices of the National Association of Manufacturers to consider the co-operation to be afforded by the industries in the taking of the 1921 census of manufactures by the Department of Commerce, and the linking of that data with the current statistics which it is proposed to collect from the various trades to show monthly the production, prices and consumption of the leading articles of commerce.

### Hoover Addresses Conference

The conference was addressed by Secretary Hoover and other officials of the Department, who explained what was already being done and what it was hoped to be able to do in the future for American business. Secretary Hoover, who was the first speaker, explained that while in the past census figures have been based chiefly upon the value of the production, it has been found that quantity was of more importance for comparative purposes and that in the future census figures will be upon a quantity as well as a monetary base, in order that they may be of practical value to the industries.

He stressed the need of co-operation from the industries, and pointed out that census information is of great importance whenever the questions of tax or tariff are taken up. The value of current statistics of production and consumption, which the department proposes to gather, was briefly explained, as was the work which is being performed along that line at the present time.

F. M. Feiker, assistant to the secretary, and Dr. Julius Klein, director of the Bureau of Foreign and Domestic Commerce, told of methods by which the department hopes to assist industry. It is proposed to make radical changes in the publication of the Daily Commerce Reports now issued, so that information of immediate value will be transmitted by mail or telegraph to firms directly interested, while Commerce Reports will be enlarged and placed upon a weekly basis. Foreign countries, especially England and France, it was said, are securing much valuable information from Commerce Reports and the reports of the department's agents abroad, and efforts are to be made to

confine the benefits of his work in the future to American business men.

### To Create Twelve Divisions

It was announced at the meeting that twelve divisions, each dealing with a basic commodity, are to be created in the Bureau of Foreign and Domestic Commerce, headed by practical men taken directly from the industry. These men will travel at least half of the time, and will attend the meetings of all trade organizations, no matter where held, where their presence is desired, such other trade meetings as they may be invited to, and will be on the boards of the leading trade papers. It is proposed also to rearrange the foreign divisions of the bureau, adding Canadian and Eastern European Divisions and splitting the Far East Division into two or possibly three units.

Much of the day was given over to a discussion of the problems of gathering monthly and biennial information of manufactures. It is proposed, in taking the 1921 census of manufactures, materially to simplify the schedules used in 1919, and considerable debate centered around the best method by which this could be accomplished. A committee of nine manufacturers present at the meeting was appointed to consider this matter and will make a report and recommendations to Secretary Hoover at an early date.

The question of simplifying the schedules sent to various industries was also taken up and request will be made that each trade appoint a committee to consider its own schedule and to make such suggestions as it believes would assist in framing a short but comprehensive questionnaire.

Tentative schedules, which contain one-quarter or less of the questions included in the schedules used in the 1919 census, have been prepared by E. F. Hartley, chief statistician for manufactures, and will be submitted to the food industry for the consideration of its committees.

The American Food Journal has on file in this office copies of the various printed forms that will be used in taking the 1921 census.

We shall be very glad to place them at the disposal of any readers of The American Food Journal who may be interested.

## Labeling of Vinegar to Have Hearing

The labeling of vinegar so as to show properly its constituent ingredients will be the subject of a hearing which will be held before the Secretary of Agriculture on August 17. Representatives of the trade have been invited to be present, or to submit their views in writing, and a full discussion of the subject is being planned.

The purpose of the hearing is to determine on the basis of the information acquired and the evidence submitted, not only the proper nomenclature for vinegar made wholly or in part from dried apple products, but also the extent to which a differentiation between the terms "apple vinegar" and "cider vinegar" may be justified.

The Agriculture Department has for some time been giving consideration to the labeling of products made from dried apple chops, apple cores and skins, or a mixture of these. Under present regulations apple and cider vinegar are synonymous, while articles made from dried apple products must be labeled to show the material from which they are produced.

Dried apple products used in the manufacture of this type of vinegar are ordinarily sulphured, the department holds, and chemists have relied to a considerable extent upon the determination of sulphur compounds in the finished product to detect vinegars made from dried apple materials. This has led manufacturers who try to conceal the nature of their product, to remove the sulphur compounds by the use of barium carbonate, it is charged. Barium salts are known to be toxic, and vinegar which has been treated with barium carbonate contains a certain amount of barium salts in solution.

In order to remove the incentive to employ barium salts, the department has ruled that pending a decision in the matter, no objection will be interposed to the labeling of vinegar made from such materials as "apple vinegar," but will not permit the use of labels calling it "cider vinegar" or "apple cider vinegar."



# Rice the Most Extensively Grown and Used Foodstuff in the World

"Rice," says a bulletin on that subject published by the United States Department of Agriculture, "is more extensively grown and more widely used than any other foodstuff. This may surprise many Americans who do not realize that millions of people eat rice as regularly as Americans eat bread. Rice is a palatable food when properly cooked, and it can be combined in many ways with more expensive and highly flavored foods into nutritious dishes. When potatoes are scarce and high in price, or when there is a shortage of wheat and other bread cereals, then rice is more extensively used; but under ordinary circumstances in many sections of this country it is neglected.

"Cereals of one kind or other are the staple of diet the world over because they are available almost everywhere, are comparatively cheap, and are nutritious and palatable. In Japan, parts of China and India, and other oriental countries rice is the mainstay because it is the most productive grain in the warm, humid parts of these countries, just as wheat is the most important food cereal in this country, Europe and many other parts of the world. A shortage of the principal cereal used by a nation is more serious than a lack of any other food, as was shown by the wheat shortage in Europe during the World War and by the more recent so-called rice riots in Japan. Such shortage immediately affects those least able to bear it; the people with the lowest incomes are generally those most dependent on cereals.

"Although the Orient produces about 97 per cent of the world's rice crop, the United States now grows more than enough to supply its own needs. Cultivation was begun in the Carolinas and Georgia in Colonial days and has now assumed commercial importance in Louisiana, Texas, Arkansas, and the Sacramento Valley in California, and there are scattered plantings in Mississippi, Florida, Alabama and Missouri. The rice fields here are large, often several thousand acres in extent and modern machinery much like that for seeding, harvesting and threshing wheat is used.

## Food Value not Indicated by Commercial Classes

"The classes of rice, or grades as they are sometimes incorrectly called, are based mainly on the percentage of unbroken grains or the size of the particles. These classes, then, have to do with appearance and commercial rather than food value, though there may be slight differences in chemical content. The housekeeper should remember in selecting a certain class of rice in preference to another that the price is no index to the amount of nourishment contained. In other words, it is often wise economy to buy the cheaper classes or kinds.

"By means of carefully devised machines, milled rice is divided into three and sometimes four or five classes, consisting generally of head rice, second head, screenings and brewers' rice.

"Second-head rice consists in general of broken kernels approximately one-half and two-thirds the length of the perfect kernels, and sells for several cents a pound cheaper than head rice. When cooked it does not look so attractive as the unbroken kernels, but can be used to good advantage in combination dishes, soups, and the like, and offers a way of reducing one item in the family food bill without affecting the nutritive value.

"Screenings is made up of pieces one-fourth and one-third the length of perfect kernels, and brewers' rice is broken in yet smaller pieces. Although screenings is likely to be pasty when cooked, it has practically the same food value as the more perfect kinds, and is equally good to use in soups and other dishes. Brewers' rice has commonly been considered too broken for table use, and as the name implies, has been disposed of chiefly to breweries. It is also an excellent feed for poultry and cattle.

## Food Value of Rice

"Rice is nutritious, easily digested, palatable and a relatively cheap source of fuel for the body.

"It is now generally agreed that the diet, as a whole, to be nutritious and palatable, must contain fuel in the form of protein, fat, starch and sugar, mineral substances, fiber or so-called roughage, and finally the vitamins, recently discovered, but considered essential for health and development. There are now known to be at least three of these vitamins, which may, for the sake of brevity, be called A, B, and C. Whole milk and such of its products as contain butter fat and the leaf vegetables, such as spinach and lettuce, are believed to be rich sources of A; the portion near the germ of the cereal grains and all fruits and vegetables, of B; the juice of oranges, lemons, grapefruit, and of tomatoes, cabbage, and carrots, of C.

"The rice grain before it is milled contains protein, fat, starch, sugar, mineral matter, fiber and vitamin B, though they are not in the right proportion to meet the body needs. By removing the bran coat and the germ in milling, part of the protein, fat, and mineral matter and practically all the vitamin are lost, but the polished rice that remains is highly nutritious food, rich in starch and containing some protein and traces of fat and mineral matter. In fact, pound for pound, rice milled in the usual way contains about as much nourishment as highly milled wheat flour, the chief differences being that the wheat contains a little more protein and a trifle more fat and the rice more starch. Or, to put it even more broadly, the fuel value, commonly stated in calories, of rice, wheat flour, corn meal, and in fact most of the cereals, is about the same; they each yield about 1,600 calories to the pound.

## Rice Easily Digested

"Rice is easily and thoroughly digested, and for this reason is often recommended as suitable for children and invalids. A series of experiments testing the digestibility of various kinds of raw starches carried on in this department has shown that rice starch is thoroughly assimilated even when raw, and that it is equal to wheat and cornstarch in this respect.

"Much has been said in recent years about the relative food value of polished and unpolished rice, owing largely to nutrition experiments carried on in the Philippines, Japan and other parts of the Orient. In the parts of those countries where rice is the most important cereal it has been found that a continuous and exclusive use of polished rice results in beri-beri, one of the so-called deficiency diseases caused by lack of vitamin B. When the diet is varied and contains plenty of milk, fruits and vegetables, as it generally does in this country, there is no lack of vitamin B, and consequently no objection to the use of polished rice, which contains nothing harmful in itself. Unpolished rice, however, many think, has a richer, better flavor, in addition to containing more of certain important nutrients; and if the demand should warrant it, could probably be successfully marketed like many other semi-perishable products.

## Polished and Coated Rice

"There has also been considerable discussion and misunderstanding as to just what is meant by the terms polished and coated rice and whether coating injures the food value. Polished rice has the bran, the germ, the gluten layer, and some of the outer layers of starch cells removed from it, and may or may not be coated. The common practice in the rice mills in this country, however, is to coat polished rice with very small proportions of glucose and talc. The coating makes the rice whiter and more lustrous, and, although it is a rather costly operation, millers and dealers believe that it pays. Since rice should be thoroughly washed through several waters before it is cooked, probably only very slight traces of coating remain. There is no evidence tending to show that coated rice, when properly washed and cooked, causes any digestive disturbances due to the small amount of coating left on the food. There is, therefore, no danger in using coated rice as a part of a mixed diet when the rice has been properly washed and cooked."



# Some Suggestions Concerning the Bacteriological Diagnosis of Human Botulism

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IN the course of an analysis of a fairly large number of outbreaks of botulism in man reported during the last ten years, it was noted that the diagnosis was frequently based on clinical symptoms only. Sometimes it was possible to demonstrate the botulism toxin or the organisms in the causative food. In numerous instances, however, the remnants of the suspected food were evidently not available or were examined by a chemist instead of a bacteriologist. From a medico-legal, and also from an epidemiological standpoint, the diagnosis could therefore be questioned, and the statistician attempting to unravel the all-embracing diagnosis "ptomaine or food poisoning" finds little definite information in the published reports. If one recalls, moreover, that botulism can be mistaken by the inexperienced person for methyl-alcohol poisoning, encephalitis lethargica, or cerebrospinal syphilis, it is obviously important to conduct careful necropsies on such cases and to determine either by cultural or histological studies the true nature of the disease. In connection with the latter procedure it must be said that the characteristic thrombi or prethrombotic stages in the arteries and veins of the meninges and brain originally described by Ophuls (1) may not be present, and a microscopic study alone may therefore fail to render a diagnosis. Bacteriologic studies of the tissues of fatal cases have been made in a few instances. V. Ermengem (2), Ornstein (3), and Graham (4) report the demonstration of *B. botulinus* in the spleen of fatal botulism cases. Some writers also recommend a cultural study of the intestinal contents at autopsy, but nothing is said regarding the possibility of finding *B. botulinus* in the stools of clinical cases.

Theoretically, at least, stool examinations appear to be valuable, inasmuch as numerous observers have found this organism in the excreta of animals which ingested food spontaneously or experimentally contaminated with the poison and spores of the organism. Constipation is almost a constant manifestation of botulism and is naturally conducive to the persistence of the organism for a considerable period in the alimentary canal of man and animals. This must be particularly the case in those instances in which a bowel movement cannot be procured, in spite of all medication, until the 10th or even the 16th day, as reported by Schumacher (5).

These and other considerations to be discussed elsewhere prompted us to study bacteriologically some cases of botulism which came to our notice during the last 12 months. The findings thus far made are suggestive and are reported in order that other workers may amplify our observations when the occasion arises.

## Methods Employed in Culturing Tissues or Stool Specimens for *B. Botulinus*

Portions of the organs are ground in a mortar with sea sand and emulsified with saline. Stool specimens are diluted with saline until the formed portions are finely divided. The emulsions are placed in 250 c.c. culture flasks and heated for one hour at 60 degrees C. They are then mixed with 100 c.c. sterile beef heart medium, which consists of one part of ground beef heart and two parts of peptic digest broth of a reaction PH 7.4. The mixture is stratified with oil, or, better, with vaseline. The flasks, which are closed with rubber stoppers and sealed with Imperial or Major's glue, are exhausted of air as completely

as possible. After incubation for from 10 to 30 days at 37 degree C., the centrifugalized supernatant fluid is administered in 1 to 2 c.c. doses, to guinea pigs. The presence of *B. botulinus* toxin is definitely ascertained by a neutralization test with known type A, and B, *B. botulinus* antitoxic sera. Isolation of *B. botulinus* is accomplished by fractional heating, enrichment, and deep cultivation in liver-peptone agar. Heating of the emulsions at 60 degree C. for one to two hours alone insures the possibility of obtaining proper cultures, as is shown in the case reports.

## Report of Cases

Richmond, Cal., outbreak (Feb. 25, 1920).—*B. botulinus* type A, and *B. botulinus* type A toxin were demonstrated in a can of olive relish, responsible for one fatal case. Anaerobic cultures from the spleen of the patient (25 grams), liver (20 grams), lung (10 grams), kidneys (9 grams), mucus from ileum (5 grams), and jejunum were negative for *B. botulinus*. The intestinal wall was not cultured.

Florence, Ariz., outbreak (May, 1920).—Canned beets were suspected as the causative food. For a bacteriological examination, the spleen (weight 242 grams), a portion of the jejunum, and the brain of Ch. R., who died on May 19, 1920, were available.

Cultures of the spleen (30 grams) and chyme (5 c.c.) of the intestinal loop demonstrated *B. welchii*, *B. sporogenes*, and *B. bifermentens*. A specimen consisting of 4 grams of macerated jejunal wall gave a culture of *B. botulinus*, type B, associated with *B. tertius*, *B. welchii*, *B. sporogenes*, *B. tetano morphus*, and two other unidentified anaerobes. The strain of *B. botulinus* was isolated in pure culture. The remaining portion of the intestinal wall, which had been kept in the ice chest for four weeks, had undergone autolysis and decomposition, but when cultured, *B. botulinus*, type B, was isolated. Sections of the brain revealed definite prethrombotic stages in the blood vessels of the brain. Cultures of the brain revealed cocci and gram negative aerobic rods.

Oakland, Cal., outbreak (October, 1920).—Canned spinach was suspected as the causative food. Available for a bacteriological study were some stool specimens collected from Miss A. R., who recovered from the disease. The responsible meal was consumed on October 14, 1920; the first symptoms were noted on the 16th; intestinal washings were obtained on October 20, and a formed stool on October 21, 1920. Six specimens of 75 c.c. each of the intestinal washings were heated for one hour at 60 degrees C. and cultured; five contained *B. botulinus*, type A. Five specimens of 75 c.c. each were cultured in an unheated state. These cultures, on repeated tests, were negative for *B. botulinus*. Three samples of 50 grams of solid stool were emulsified in saline, heated at 60 degrees C. for one hour and cultured. Only one sample gave a culture of *B. botulinus*. Three unheated specimens of the same sample were negative. *B. botulinus* was, therefore, present in six stool specimens collected on the sixth and seventh days, respectively, after the consumption of the causative meal.

Grand Rapids, Mich., outbreak (January, 1921).—Canned spinach was suspected as the causative food. Through the courtesy of Dr. Merrill Wells the intestinal washing (enema) of Miss H. was collected on the eleventh day and made available on the seventeenth day after the consumption of



the infected meal. One flask out of five stool specimens of 50 c.c. each, which had been heated to 60 degrees C., and cultured, contained, on the tenth day of incubation, *B. botulinus* toxin, type A. The isolation of the organism in pure culture is in progress. Two unheated specimens were negative. *B. botulinus* was, therefore, present in a stool on the eleventh day after the causative meal had been consumed.

#### Comment

The forgoing observations indicate that the spores of *B. botulinus*, when presumably ingested in the poisonous food, may remain in the intestinal canal and may be eliminated in the stools of typical botulism cases. Several important problems suggest themselves for immediate experimental study or investigations on human cases of this disease; the following points deserve particular consideration: (1) Determination of the average period of fecal discharge of *B. botulinus* spores in severe and mild cases of botulism; (2) quantitative estimation of the eliminated spores per 1 or 10 grams of enema or formed stool; (3) quantitative comparison of the spore content of the causative food and that of the stools; (4) testing of filtered stool suspensions, on guinea pigs, for the presence of toxin; and (5) testing for *B. botulinus* spores the stools of normal human beings who eat raw fruit or vegetables and live in districts in which the organism is quite common in the soil.

These investigations would undoubtedly contribute information as to the possible pathogenicity of *B. botulinus* spores as suggested by Orr (6), Edmondson, Giltner and Thom (7), and others. *B. botulinus* possesses a noteworthy degree of growth adaptability, and it is possible that the spores can germinate in the peritonic intestinal tube and form toxin. Some personal observations on spontaneously diseased domesticated animals justify this suggestion. It appears also of importance to know if botulism convalescents can remain "spore carriers" and, as such, assist in the progressive pollution of the earth with dangerous bacteria. The diagnostic value of the demonstration of *B. botulinus* spores can only be accepted when repeated tests on normal stool samples have demonstrated an absence of this organism. An experimental study of the problem mentioned under (5) in the preceding paragraph is in progress. The examination of numerous sewage samples of urban and rural origin has thus far failed to give positive *B. botulinus* cultures, and we therefore feel confident that the stool test will be of practical value. However, it remains to be demonstrated as to the number of days a botulism patient is capable of discharging *B. botulinus* spores. The observations made by Thom, Edmondson, and Giltner (8), and others on guinea pigs strengthen our belief that the spores may be demonstrated only in the fecal remnants of the causative meal. Inasmuch as the discharge of this material is quite often delayed for many days, on account of the intestinal paresis, positive findings may be recorded for two, perhaps even three, weeks.

A quantitative estimation of the spores in the stool samples or in the causative food offers no technical difficulties. For example, in one of the recent outbreaks the spinach responsible contained *B. botulinus* spores in practically a pure state. Shake cultures and particularly those in dried liver agar gave colonies which could be readily counted.

The finding of *B. botulinus* spores in the jejunal wall, but not in the chyme, of the particular intestinal loop mentioned may be merely accidental or may vaguely support the recently advanced, but rather fanciful, conception (9) that "*B. botulinus* when taken into the human system lodges in the digestive tract, and the toxins produced there spread over the body." It is our intention to discuss this phase of botulism elsewhere in detail; nevertheless, the diagnostic significance should be emphasized. We had recently occasion to study, in co-operation with Dr. L. R. Vawter, of Reno, Nev., a cattle disease in which *B. botulinus* apparently exhibited invasive properties. Invariably the organism was isolated from the inflamed duodenum and jejunum, the liver, mesenteric lymph-nodes, etc.

It is noteworthy that our two attempts to isolate *B. botulinus* from the spleen were not successful. These results may, in part, be due to the fact that post-mortem invasion was made impossible by the early removal and careful preservation of the tissues after death.<sup>1</sup>

#### Summary

*B. botulinus*, type B, has been isolated from the jejunal wall of a case of botulism fatal on the fifth day of the disease. Spleen cultures in two instances were negative for *B. botulinus*. Stool specimens of two clinical cases of botulism, obtained from two different outbreaks, contained *B. botulinus*, type A, on the sixth, seventh and eleventh day, respectively, after the consumption of the causative meal. The methods of tissue and stool cultures are described. The importance of culturing the stools and tissues of all clinical cases of botulism is evident.

## A Successful Rural Milk Campaign

During the week of May 15 an unusually successful milk campaign was conducted in Walworth County, Wisconsin, where the message of milk, the fundamental food, was carried into every home in the entire county.

The campaign was conducted by the Walworth County Farm Bureau, the National Dairy Council, the Wisconsin Dairy Council, and the Wisconsin College of Agriculture. W. A. Foster, secretary of the Farm Bureau, was the man behind the gun.

Full co-operation was received from everybody—the mayors issued proclamations, the schools made milk posters and staged the Milk Fairy Play, the business men dressed their windows in "milk attire"—using the very splendid posters made by the schools and the National Dairy Council; they also tied their advertisements up with the Milk Week propaganda; the nine newspapers carried feature articles and advertisements; the picture shows co-operated in running milk films and slides; the local citizens gave support, likewise the women's clubs, the churches and all other organizations within the county.

One month before the campaign commenced a survey of 1613 representative school children from rural schools was made, which showed the following interesting and startling facts:

680	drink tea and coffee regularly, averaging 1.5 cups daily .....	42 per cent
980	drink milk regularly, averaging 2.1 cups each .....	61 per cent
268	drink no milk at all.....	17 per cent
365	drink milk occasionally.....	22 per cent
241	use no butter.....	15 per cent
		100 per cent

During the milk week there were 92 meetings held, addressed by 16 speakers, furnished by the organizations conducting the campaign. Preparatory to the mass meetings held each evening, oftentimes a parade was held.

The closing of the campaign came on Saturday at the county seat, where the band furnished music during the entire day, and where bread, butter and cheese sandwiches and ice cream cones were given to nearly 10,000 people, who gathered for the festivities. Among other attractions came the Milk Fairy Play, which was staged in the open in a very beautiful and pleasing manner.

Reports indicate the campaign brought the following results:

- (1) An increase of 22 per cent in sales of brick ice cream for home consumption.
- (2) An increase of 19 per cent in consumption of butter.
- (3) An increase of 18 per cent in consumption of fluid milk.
- (4) An increase of 30 per cent in consumption of cheese.

The National Dairy Council will be glad to outline a similar campaign for other counties interested in educating the public to a greater appreciation and greater use of dairy products.



# New Detroit Plant of the National Biscuit Company

The National Biscuit Company has established a new plant in Detroit, in a section located in the geographical center of the city, and in a district that is especially desirable in that it is a manufacturing center with excellent railroad and transit facilities. The new factories are at Baltimore and Forsyth Avenues, a district that also contains the homes of substantial working families from which many of the employees of the bakery are drawn. This central location, the city limits being practically four miles in any direction, eliminates long hauls and greatly simplifies the problem of city delivery.

The main building is located on the corner and has seven floors and basement. It is 200 feet long and 150 feet wide. The exterior is of buff-colored, speckled brick walls and piers with cream-colored, speckled terra cotta window sills, lintels and cornices, which, with the imposing towers, presents that substantial and attractive appearance and individuality, characteristic of the new buildings of National Biscuit Company.

In the rear is the power house and railroad and across Forsyth Avenue is the garage and stable.

In the general layout, as well as in the construction of the buildings, extreme care has been taken to promote safety, sanitation and efficiency. All of the buildings are of thoroughly fireproof construction with steel columns, beams and girders, tile arches and partitions and brick walls.

## Install Fire Precautions

Automatic sprinklers are installed throughout and every precaution has been taken to prevent fire and to protect the employees from its attending hazards. A new feature in this regard is the arrangement of the stairways, which are entirely separate from the building and lead directly to the street. All standard N. B. C. bakeries have what in

reality are fireproof and smokeproof towers, but at Detroit it is necessary to pass through open air vestibules in order to reach the stairs from any floor of the bakery.

The possibility of accident has been reduced to a minimum through the use of carefully designated guards for all machinery and by the installation of fireproof sliding doors at the elevator openings, each elevator being equipped with a door divided horizontally in the middle, one half going up, the other down flush with the floor.

Elevator accidents are numerous in many American manufacturing plants and the majority of them are charged, not to the elevators, but to faulty enclosure of the hatches and especially to the lack of proper protection at the openings. At the Detroit bakery accidents from such causes are impossible. There are no flimsy gates and the heavy fireproof doors are provided with locks so that it is necessary for the elevator to be at the landing before the doors can be opened, and after they are opened the elevator cannot move until they are closed.

## Employees Well Cared For

Of fully as great importance as safety in the bakery is the condition under which employees work. Much thought and study have been given to this matter at Detroit. The building has been so arranged on the lot that all four sides are exposed and the wide, open floors, high ceilings and long rows of windows on all sides give ample room and an abundance of sunlight and air, making ideal working conditions. Commodious dressing rooms, well lighted and ventilated, are provided and shower baths are available after finishing the day's work.

On the seventh floor is the restaurant, where lunch may be had at cost, and here also is a men's smoking room and a girls' rest and recreation room.

The manufacturing is done on the sixth, fifth, fourth



A section of the icing department of the Detroit bakery





A scene in a mixing room at Detroit. Electrically operated hoppers carry flour to the mixers and to dough troughs for the spindle mixers

and third floors. The second and first floors are for receiving and shipping and for storage of the finished product, while the basement is the warehouse for raw materials.

The railroad side track at the rear runs into the building and alongside a tremendous receiving and shipping platform at the second floor level, thus affording thorough protection from the weather and greatly facilitating the handling of materials.

Coal for the boilers and the ovens is received in bottom dump cars and drops directly through large openings in the track into separate bunkers extending under the entire receiving platform. Here it is distributed by an electric-driven, mono-rail traveling hoist with clam shell bucket which also runs into the boiler room and deposits coal once a day in the stoker hoppers. The oven coal is elevated directly to the firing platform on the fifth floor. Enough space has been provided in the bunkers to hold a six months' supply of coal.

#### Raw Materials Enter Basement

Flour, sugar, molasses, and other raw materials are taken directly to the basement and the incoming finished product, paper stock, etc., are stored on the second floor. Carload shipments are made from the second floor, while city and suburban orders are filled from stock on the first floor.

Forsyth Avenue is a thoroughfare for but 116 feet, the balance having been vacated and is now owned by the company. It is a broad, well paved street, and the loading and handling of the wagons and automobile trucks is accomplished without confusion and without interference with traffic. Provision has been made for the interurban rail-

way cars, which run on Baltimore Avenue, to be loaded at the shipping door on Forsyth Avenue.

On the sixth floor are the mixing and proving rooms and the bakery. The mixing and proving rooms are on the Forsyth Avenue side and opposite them is the long row of nine ovens, thus minimizing the distance the doughs have to travel from mixers to ovens.

The bakery proper is a clerestory and extends the full length of the building, 200 feet, and is 75 feet wide and 20 feet high. There are windows at both ends and at both sides, those on one side being over the ovens, thus affording such excellent ventilation that it is possible to keep the baking floor cool even in summer.

The fifth floor is arranged for the storage of Qus and the storage and renovating of cans, and also contains the machine shop, carpenter shop and the automatically controlled fans, heaters and coolers for maintaining a uniform temperature in the mixing and proving rooms.

Packing is done on the fourth floor, where the pans from the ovens above are automatically delivered onto packing tables and returned to the ovens.

The icing department is on the third floor. At the south end is the mixing room. Another part of the building is occupied by the icing and deposit machines and the long traveling dryers in which just the proper amount of moisture is removed from the goods to render them ready for packing. A carefully designed air-conditioning system has been installed to make it possible to operate the dryers continuously under varying weather conditions. Another portion of the floor is given over to the packing of the iced varieties.



The goods that are packed on the fourth and third floors are removed to the second or first floor as desired, and the cycle of operation is completed.

The machinery throughout the bakery is electrically operated from the power house, which is by no means the least interesting part of the plant.

#### Boilers Are Automatic

The boilers and stokers are automatically controlled so that there is maintained a uniform steam pressure, a uniform water level in the boilers, and a varying coal and air feed and damper regulation according to the demand upon the boilers.

At the time of starting the bakery in the morning the load on the boilers increases nearly 250 per cent in the space of a few minutes without a change in steam pressure and without requiring any attention from the fireman. His sole work is the periodic cleaning of the fires.

The boiler room is 40 feet high with great windows, and the fan which supplies air to the stokers has its suction at the ceiling, so that the boiler room is well ventilated. The pump room is on the same level as the boiler room and above it is the engine room in which are located the engines, generators and switchboard, as well as the refrigerating compressor which cools the refrigerator rooms, water for drinking and mixing and maintains the proper temperature in the coolers for the temperature control systems. The electric generating equipment is of the most

modern and economical type with Unaflow engines operating under high pressure and superheat.

#### Safety Prime Consideration

Safety has been one of the prime considerations in the power plant as well as in the bakery. There are, of course, the customary circuit breakers on the electric feeders, as well as regulators for voltage, but in addition there is provided a device to automatically stop the engines in case of a few revolutions of overspeed, thus eliminating the chance of fly wheel explosions. At the boilers also are special valves which will close if a tube in any boiler should burst or in case of accident to the steam piping. All valves on the main steam pipe are operated from the engine room side of a wall separating the engine room from the boiler room, so that in case of accident to the steam piping the portion affected can be shut off without danger.

The garage and stable is a one-story building and is supplied with power, heat, light and water from the power house through a tunnel under Forsyth Avenue. The building is 240 feet long and 122 wide and is capable of housing 80 wagons and automobiles and 50 horses. The garage is equipped with a modern gasoline and oil system and has a separate repair shop. In the stable, as elsewhere, the same care for cleanliness has been observed, and everything done that is humanly possible to safeguard the health of horses.

## Canning Hawaiian Pineapple

Pineapples ripen in Hawaii throughout the year, and the Hawaiian pineapple canners have the unusual distinction of handling a product which may be canned the year round. This is due to the climate of the Hawaiian Islands, for the temperature does not vary more than 10 degrees. The main portion of the Hawaiian pineapple crop, however, ripens between May and October, August being the principal month.

J. Alexis Shriver of the U. S. Department of Commerce, describes the preserving process as follows:

"Throughout the season the pickers in the fields go along the rows cutting only the pineapples that are fully ripe. After cutting off the crowns, which are left at the end of the rows in the fields to be used for replanting, the pineapples are placed in strong wooden boxes holding from 15 to 20 pineapples each, according to the weight or size, the usual weight desired for canning being between three and four pounds. These boxes have a handhold in each end and are easily piled without injuring the fruit. They are loaded on wagons or open cars and taken directly from the fields to the canning house. Here the boxes are unloaded on a platform, usually onto a two-wheeled truck carrying from 6 to 10 boxes at a time, and wheeled to the peeling machines without delay.

"There are a number of devices for peeling the rind and eyes from the pineapple. The older types resembled an apple-paring machine and made it necessary to pare too deep to remove all trace of the eye. The presence of a small speck of eye in the edge of a slice is considered a decided fault. Another defect of the apple-parer type of machine was the necessity for hand labor, the shape of the pineapple after paring depending largely on the operator, the tapering ends of the fruit making the task of shaping it somewhat difficult. The newer machinery has combined this step of removing the rind and eyes with several succeeding steps in the process, so that the latest machine not only pares, but removes the core, and sizes the pineapple to the proper diameter to fit the can, and, finally, another machine connected with the first, slices the sized fruit.

"It is needless to state that this new machine is rapidly displacing the older types that required handling for each step of preparation. The sizing of the pineapple in order to fit the can is one of the sources of loss in pineapple canning. The market seems to demand a slice with a

diameter of approximately three and one-half inches, or at least this is the only size the market has known. Although this may be due either to the established size of the cans, or to some settled custom of the sales agents, still the result is that all pineapples are sized to the one diameter, no matter what the size of the fruit may be. This creates a demand for a small pineapple, one weighing from three to four pounds, and the finer fruit, weighing from six to ten pounds, must be sized accordingly.

#### Crushed or Grated Pineapple Choicest Part of Fruit

"With the old type of machine the outer portion of the pineapple when pared off was wasted, and with large fruit it was not unusual to lose as much as forty per cent in this manner. With the new type of machine, this outer section of the pineapple is run through a device which macerates the flesh and separates it from the rind and eyes. The resulting product is what is known as crushed or grated pineapple, and, incidentally, since the outer portion of the fruit which has been exposed to the sun is the very sweetest part and contains the greatest percentage of sugar, crushed or grated pineapple is the choicest part of the fruit.

"As the pineapple passes through the sizing, paring and slicing machine, the rind and attached flesh drops to a conveyor belt moving toward the macerator, coming out into large buckets, whence it is carried by men to the cooking vats, the refuse rind and eyes being separated from it in the macerator and carried to the press. These eyes and skins are put through a press for the purpose of extracting as much of the watery juice as possible. The pulp is then carried by another conveyor belt to an incinerator where it is reduced to ashes.

"The main portion of the pineapple passes from the paring, sizing and slicing machine in another direction over a separate set of conveyor belts between lines of women at tables. These women, wearing rubber gloves, select the various grades of slices from the moving belt. The first women pick out the best slices, of which it takes eight to fill a No. 2 1-2 can, while the women further along the belt take the second grades of slices, and the women at the end receive the poorest or broken slices, with which they fill the cans containing the cheapest grades. The flesh of the fruit as put up in Hawaii is so juicy and tender that it is easily broken, so that a large proportion of good and palatable fruit goes into the lower grades.



## BOOK REVIEWS

### Diet of the Foreign Born

Dietary problems of immigrant families are among the subjects discussed in a forthcoming book, "New Homes for Old," which is to be issued soon as the sixth volume in the series of Americanization studies being made under the auspices of Carnegie Corporation of New York. The following extracts are made public:

"No extensive study of the dietary practices of the different groups, either here or in the old country, has been undertaken, but considerable evidence has been secured in substantiation of the fact that their old-country practices are being modified in this country. This is not being done consciously in response to dietetic requirements, but often blindly in response to what seem to be American customs or necessities. There has been some conflict of testimony with regard to the changes in the Czecho-Slovak and Croatian groups. The Italians are said by all to have made very slight changes in their diet in this country. The Lithuanians, Poles, Russians and Ukrainians, on the other hand, are said to have made very radical changes.

"The modification that is spoken of most frequently and that is of gravest concern to many of their leaders, is the increased use of meat. Attention has already been called to the explanation of this in the fact that the price of meat was prohibitive at home, and that fruits, vegetables, and dairy products were enjoyed without expenditure of money.

"Excessive use of coffee is said by visiting housekeepers and others familiar with dietetic problems to be one of the most serious faults of the diet of many groups, especially the Slavic groups. It is a general custom to put the coffee pot on the stove in the morning and leave it there all day for any member of the family to help himself to coffee when he wants it. This is entirely a new habit which has been learned in America, as coffee was almost unknown in the poorer groups in the old country. One explanation that was given by a foreign-born woman was that these families were used to a diet of soup at home, and that as they gave this up in this country they felt the need of some liquid to replace it. One Polish woman who was asked if she had changed her diet in this country, replied: 'Naturally, at home everyone had soup for breakfast, and here everyone has coffee and bread.'

"Another change that was reported over and over again was the use of more cakes and sweet rolls. This seemed to be considered a peculiarly American change, as was evidenced by the families who reported that they had not changed their diet, as they didn't like the American diet of cakes. Some of them, indeed, were very scornful of what they considered the American diet, saying among other things that they could not afford to eat steak and chops every day, that they did not like sweets, that their 'men' would not eat 'out of a can,' that they did not like fried things. Their ideas on American diet were gained in part from the food in restaurants, in part from what the children learned in cooking lessons in school, and in part from general suggestions that they have picked up.

"Undoubtedly misguided social workers who have tried to give advice on diet without themselves knowing much about it are responsible for some of these ideas. In a certain mill town in Massachusetts, for example, a social worker employed by the mill discovered what she thought was the cause of the paper falling off the walls in the fact that the people boiled their food. She therefore went in and taught them to fry meat and other foodstuffs.

"The problem of how far the immigrant groups should be encouraged to modify their diet can be determined only after a careful study of their dietary practices. The price and quality of food available to immigrants must be ascertained. Their habits, customs and preferences must be thoroughly understood. There can be no question, however,

that help should be given them in making the modifications required by the changed environment."

"EATING TO LIVE LONG." By William Henry Porter, M.D. Published by the Reilly & Lee Company, Chicago.

The second edition of Doctor Porter's book, "Eating to Live Long," has appeared from the presses of the Reilly & Lee Company, of Chicago, and comes well recommended in an introduction by Dr. Edwin Bowers who is a colleague of Dr. Porter's and who knows and can testify to the success of his work. Says Dr. Bowers:

"Only a few years ago, I, myself, had an experience with Dr. Porter's diet and treatment that served to make me even more enthusiastic about it than I ever had been before. I pass the information along to a few million more middle-aged men who are working at top speed, as I was, and am."

Dr. Porter has the pleasant blunt style of the practitioner who seems to know what he is talking about. In his preface, he says:

"Man is an organism built around a food tube. All man is, all he ever has been, has had its original motif in his need for food, and in the meantime he has evolved in order to secure it.

"History itself, in the main, is merely a series of accounts of how certain peoples pushed certain other peoples out of the way, in order to avail themselves of the other's food supply, or of their potential sources of food."

"Upon the difficulty of securing an adequate supply of balanced nutriment depends also their cultural development; for, if the aim and end of existence revolves around a grubbing of arid acres, it is obvious that not much energy can remain for speculative and creative endeavor."

Some of Dr. Porter's chapter headings might prove interesting here, in furnishing an idea of what he has to say, and how he says it.

"Foods, Fads and Foolishness" is one, under which appears "The fasting fallacy," "Fletcherism a delusion," "When to drink," "Making digestion earn its way."

Writing on the score of the absurd diet practiced by the business women of this country, Dr. Porter is unusually blunt and to the point as to the evil, and seemingly with good cause. He says:

"Of all the dietetic crimes committed in America, there are none so flagrant and so harm-producing as those the average young business woman in this country is continually committing against herself, her future husband and her possible children.

"By the hundreds of thousands everywhere, young working women are attempting to nourish themselves upon a diet that bears no more relation to their actual food needs than a handful of sawdust bears to a banquet.

"One has but to look into the lunch boxes of these young women, or to observe them as they line up at the 'quick lunch counter' for their noonday meal to appreciate this fact.

"The cult of the 'dainty' has been established as a sort of a fetish. Thin slices of demineralized bread, with a leaf or two of lettuce, a cut of soggy pie, or a piece of anemic looking cake, is, by the vast majority of young business women, considered a fair to middling lunch.

"Or a chocolate éclair and a glass of syrupy soda water, a double insult to a food-craving stomach, is thought to be food material sufficient to repair waste tissue, provide mineral salts, vitamins, and fuel the organic boilers for another five-hours spell at the energy consuming typewriters.

"Is it any wonder that these girls develop anemia, sallow pimply complexions, obstinate constipation, soft teeth and bones, and a tendency towards neurasthenia."

In conclusions, Dr. Porter tells us not to worry, and that a cheerful frame of mind, especially at mealtimes, is essential.

"For," he writes, "A sour disposition creates a sour stomach. A sour stomach spoils good food. And this, together with picking the wrong kinds of food, spoils a lot of good people."

"So select your food carefully and eat it cheerfully. That's all there is to eating to live long."



# NEWS OF THE FOOD TRADES

## Decree is Issued in Baking Powder Case

### Federal Trade Commission Finally Rules on Dr. Price's Product

Following inquiry, trial and final argument, the Federal Trade Commission issued an order against the Royal Baking Powder Company to cease and desist from the sale or advertising for sale a phosphate baking powder under a label which simulates so closely as to be deceptive, a label long identified with a cream of tartar powder and from advertising price of the new powder as a reduction in price of the former product.

A competing concern complained against the Royal Baking Powder Company some months ago, charging unfair methods of competition. Testimony at trial of the case showed that the Royal Baking Powder Company in 1899 absorbed the company which manufactured and sold the well known Dr. Price's cream baking powder, which had for its acid ingredient cream of tartar. At the trial it was shown that for a period of over sixty years prior to September, 1919, "Dr. Price's Cream Baking Powder" was marketed and advertised exclusively as cream of tartar baking powder, and that for at least thirty-five years the respondent and the Price Baking Powder Company carried on an extensive advertising campaign throughout the country to establish to consumers the superiority, especially from the point of view of healthfulness, of cream of tartar baking powder, and the inferiority of baking powders manufactured and sold by competitors which contained phosphate or alum or both as their acid ingredients. The latter competing powders were represented by the Royal Baking Powder Company in this advertising campaign to be unwholesome and deleterious.

It was further brought out in the testimony that in September, 1919, at a time when the price of cream of tartar was increasing the Royal Baking Powder Company after making certain alterations in its factory began the output of Dr. Price's baking powder, substituting phosphate for cream of tartar as the acid ingredient of the commodity. It was shown also that co-incidental with this change in the basic ingredients of the powder the Royal Baking Powder Company started a nationwide campaign advertising that the well known Dr. Price's baking powder could now be bought by housewives for one-half the price formerly charged. This advertising campaign, the testimony showed, misled the public into the belief that when it bought Dr. Price's baking powder it was buying the well known cream of tartar brand for one-half what it formerly cost, when as a matter of fact it was buying a phosphate powder.

Commenting on this decree, Frank D. Bristley, once president of the Royal Baking Powder Company, said:

"This is an old matter, and deals with past history as the ruling agrees with the United States Court of Appeals decision of last year, with which we have been complying for several months.

"The Federal Trade Commission's order to cease and desist is substantially in accord with the decision of the Court of Appeals and refers only to the former red label, and inasmuch as we have been complying with the decision of the Court of Appeals since last November by adopting our present golden orange label, the present order of the Federal Trade Commission to cease and desist will cause us no further change.

"In February, 1920, we were cited to appear before the Federal Trade Commission in regard to the label we were then using on Dr. Price's Baking Powder made with phosphate. Prior thereto a similar question was raised in proceedings begun in United States District Court in Arkansas, the decision of which court we appealed to the Circuit Court of Appeals, which confirmed the judgment of the lower court.

"From this decision we took a further appeal to the United States Supreme Court, where the matter will be finally decided. Pending determination of this appeal, the Court of Appeals granted an injunction preventing interference with goods bearing the red label, some of which may still be in dealers' stocks.

"Notwithstanding this appeal and injunction we ceased using any of the labels in question immediately upon receipt of notice of the decision of the Court of Appeals on November 5 last and since that time no Dr. Price's Baking Powder made with phosphate has been packed or shipped under the label objected to.

"We are very anxious for an early decision and final determination of this controversy by the highest tribunal—the United States Supreme Court—in which we feel confident our right to our old and well established red label with the changes prescribed by law on Dr. Price's Baking Powder made with phosphate will be confirmed. Meantime we are not sending out any of these goods excepting with our new golden orange label reading 'Dr. Price's Phosphate Baking Powder.'"

### Rolfer Company Buys Semola Plant

Articles of incorporation have been filed with the secretary of state at St. Paul by the Rolfer Milling Company which will engage in the manufacture of semolina, a coarse granulated flour made from durum wheat that enters largely into the production of macaroni, spaghetti and vermicelli. The corporation has purchased the mill formerly owned and operated by the Semola company at St. Paul getting title through the court receiver when the latter company went through bankruptcy proceedings. The new concern's authorized capital is \$500,000. The incorporators are Kay Todd, William Connelly and Lillian M. Gardelin, all of St. Paul.

## Meat Packing Industry Country's Largest

### C. B. Heineman, Institute Secretary, Says Recent Census Places It in Front Rank

In addressing the convention of the American Institute of Banking at Minneapolis, C. B. Heinemann, secretary of the Institute of American Meat Packers, said in part:

"The meat packing industry is larger than any other business in our whole industrial organization. The Census figures recently made available showed that in 1919—the year to which the Census figures apply—1,305 slaughtering and meat packing establishments turned out products worth more than four and a quarter billion dollars; worth more, in fact, than the products of any other American industry.

"Four billion dollars of productive wealth means a great deal. That sum of money withdrawn from the channels of trade—if you can conceive of some catastrophe obliterating the packing industry—would create nothing short of a commercial and industrial calamity.

"Incidentally, it represents the dressing and distribution of 10,818,000 cattle, 4,395,000 calves, 13,523,000 sheep, lambs, goats and kids and 44,519,000 hogs. The new Census shows that the cost of raw materials, principally live stock, constitutes 88.8 per cent of the value of the products of the packing industry.

"Tests of the relative profitability of crop farming, live stock production and crop and live stock production combined have been made by both Federal and State agencies. These tests show clearly that live stock production is a valuable complement to crop farming and that the crop farmer who raises live stock fares better as a rule than the crop farmer who does not do so. In many cases, it is not too much to say that live stock production is essential to successful crop farming.

"Live stock production also tends to diversify crop farming. In bad years it sometimes reduces the farmer's losses below what they would have been had his activities been limited to crops alone.

"For example, figures recently issued by the United States department of Agriculture show that the farm value of all classes of live stock during the year ending May 15, 1921, decreased less than the value of many other farm staples such as cotton, potatoes, corn, wheat and hay."

At another point Mr. Heinemann said:

"This country alone last year consumed 909 million pounds of veal, 653 million pounds of mutton and lamb, 7,551 million pounds of pork, 1,300 million pounds of lard and 6,000 million pounds of beef."

In discussing packers' profits, Mr. Heinemann said:

"I have fairly comprehensive figures on the profits of five of the larger com-



panies—those whose reports were most readily available in detailed form.

"I find that last year these companies, taken in the aggregate, made an average profit of 19 cents per head of live stock slaughtered. They dressed 37,155,958 meat animals and distributed the products therefrom. Their aggregate profits were \$7,218,086. Dividing one figure by the other shows the average profit per head to have been 19 cents.

"Their aggregate sales last year were \$3,013,002,000 so that their profits averaged less than a quarter of a cent on each dollar's worth of product sold. Their rate of profit on investment for the year was 1.2 per cent on capital and surplus.

"I have similar figures for a number of years. For example, from 1913 to 1920 inclusive, these packing companies slaughtered 297,949,331 animals, sold 17,299,883,972 dollars worth of products, and made aggregate profits of approximately \$289,524,213. If you can remember those long figures, a little mental arithmetic will show you that over this eight-year period, the profits of the packers averaged 97 cents on each head of live stock or 1.7 cents per dollar of sales.

"I submit, gentlemen, that these statistics indicate a modest profit-rate and stable maintenance of earnings. On this showing the meat packer deserves a good rating from the banker the producer, the retailer and the public."

Concerning live stock values, Mr. Heinemann said:

"At this time, speaking roughly and approximately, live stock values are back to 1914 levels. Most commodities are not back to 1914 levels. Live stock values have been deflated to normal quotations. Most products have not. Consequently, relative to general commodity prices live stock is cheap; it is back to normal. Surely the banker should feel safer in supporting a commodity that is already down the hill than one which is still falling. But it is not easy to obtain a loan on live stock.

"Wholesale meat prices also have been deflated. There have been heavy declines during the last year in pork, beef, and lamb. Hides and by-products have gone down about 70 per cent from their peak values.

"The packing industry, serving the public with amazing cheapness and astonishing efficiency, is doing a normal volume of business in this year 1921 and is faced in the right direction."

#### California Fruit Growers Cut Prices

A cut in the prices of Blue Ribbon Dried Peaches is announced by the California Peach and Fig Growers of Fresno, in issuing their prices on the 1921 crop. The reduction places dried peach prices nearly 50 per cent below the opening quotations for 1920 and are guaranteed against the association's own decline until January, 1921.

This cut is in harmony with the policy of the California Peach and Fig Growers of trying to bring the association products within the reach of the average consumer and was made in an endeavor to aid in the campaign to restore business in food commodities to normal.

#### Dutch Cheese Prospects for 1921 Above Average

Prospects for the production of cheese in the Netherlands this season, are said to be considerable above the average. Experts report both cattle and pastures in excellent condition. While the price of cheese has fallen somewhat, there is still enough margin of profit in its manufacture to encourage large production, and now that all the Government restrictions as to its manufacture and export have been done away with it is expected that there will be a large trade. Exports of cheese of all grades to all countries so far this year have been much larger than in the corresponding period of 1920. Total exports for the first four months of the year were 14,832.9 metric tons, valued at 20,337,263 florins (about \$6,779,088 at prevailing exchange), compared with 9,737 metric tons, valued at 12,528,599 florins (about \$4,176,199) in the first four months of last year.

#### How Peanuts Are Bought, Sold, and Utilized

Peanut cleaners in the South sell peanuts in three ways: Direct to the purchaser, usually by wire; through traveling representatives of cleaning or shelling plants; and through resident brokers.

Probably the greater part of the cleaned peanuts are sold through brokers in city markets. These men often handle peanuts exclusively and may represent one or more cleaners or shellers. They usually sell in car lots only and supply salters, wholesale confectioners, grocers, bakery supply houses, and large peanut butter manufacturers. Sometimes a broker pools less than car lot orders between the various receivers and charges little, if any, more than car lot prices. Usually brokers make sales on an f. o. b. shipping point basis, although occasionally a sale may be made on a delivered basis.

Prices on less than car lots are reported by the U. S. Bureau of Markets and Crop Estimates for the following varieties and grades: Cleaned Virginia Jumbos, Fancy and Extras; Shelled Extra Large and No. 1 and No. 2; also No. 1 and No. 2 Spanish from Virginia, Georgia, Alabama, and Texas, and No. 1 and No. 2 Runners from Georgia and Alabama. Each reporter is requested to secure also from the brokers in his city the f. o. b. prices and the market conditions in the several shipping districts with which he is in touch.

The various types and grades of peanuts are sold to somewhat widely diversified lines of business. Cleaned goods—that is, Virginia peanuts in the shell—are commonly sold through the vending trade. Shelled stock is sold to salters, to the peanut-butter manufacturing trade, and to candy factories. Spanish No. 1 shelled are perhaps most frequently salted, and are frequently jobbed through wholesale bakery supply houses. Extra large Virginias, as well as No. 1 Virginias, are sometimes blanched and salted, but these grades are perhaps more extensively used in the manufacture of peanut squares, brittle, and chocolate dips. No. 2 Spanish and Virginias usually find their way into bulk peanut butter, although, these too, may be used in peanut candies. Asiatic peanuts of the large sizes, such

as 28/30 and 30/32 to the ounce, usually go into candies or are used for salting stock, while the smaller sizes, such as 38/45's, generally find their way into peanut butter, which ordinarily is made of a blend of Virginia and Spanish peanuts.

#### Publish Bulletin on Milk and Cheese Bacteria

The New York Agricultural Experiment Station at Geneva, N. Y., has published a bulletin by G. J. Hucker, assistant in bacteriology research, on the relation of the number of bacteria in milk to the quality and yield of cheese.

In order to determine the significance of the quality of milk used in the production of cheddar cheese as determined by the number of bacteria present, a series of observations were made at a cheese factory during the summer of 1920. A record of the bacterial count of the milk, both as received at the factory and in the making vat, was kept and a study made of the relation between the quality of the milk and the quality and yield of the cheese.

Sample cheeses were retained and scored. These scores were then compared with the number of bacteria in the milk as determined either by actual count under the microscope or by using the acidity of the milk as an index of the number of bacteria present. No striking relation was found to exist, although it was observed that milk containing from 12 to 42 million bacteria per cc. produced a cheese of more constant quality than did milk containing a smaller number of organisms.

The yield of cheese in each vat was computed daily and compared with the number of bacteria present in the milk. In the series of observations made, variations in the yield of cheese showed no evident relationship to variations in the number of bacteria in the milk.

It is concluded that the present method of grading market milk on the basis of the total number of bacteria present is not applicable to the grading of cheese milk. The specific types of bacteria present in the milk are far more important than the total number present.

#### Macaroni Companies Combine

The Briggs Cereal Products Company of Cincinnati, O., makers of macaroni, spaghetti and egg noodles, has combined with the Fortune Products Company, Chicago, selling them their brands, trademarks and good will. All of the former brands of the Briggs Company will be manufactured by the Fortune Company at Chicago, and Robert B. Brown who was president of the Cincinnati concern has been made sales manager of the Fortune Company.

#### New Secretary for St. Louis Wholesalers

Walter J. Tancil of the St. Louis Chamber of Commerce staff has been appointed secretary of the St. Louis Wholesale Grocers' Association succeeding Hugh M. Mace who resigned recently to take up his work as specialty sales department manager of the Salinger Brokerage Company of St. Louis. Mr. Tancil will take up his duties on August 1st.



# Harvard Bureau Reports on Jobbers' Costs

## Research for 1920 Among Wholesalers Shows Some Increase in Efficiency—Year One of Net Loss

The Harvard Bureau of Business Research has made public its investigations of operating costs in the wholesale grocery business for the year 1920, based on returns from 320 wholesalers who have submitted carefully prepared records in comparable form.

These firms were located in forty-five states and Canada. Their aggregate sales in 1920 were \$643,949,000. The net sales of the individual firms ranged from \$176,000 to \$28,400,000; about one-half the firms had sales between \$500,000 and \$1,500,000.

Some of the conclusions were forecasted by Dr. Melvin T. Copeland, director of the bureau, in his recent address before the National Wholesale Grocers' Association at Chicago, but his details are of special value because of the effort being made by the association to increase the wholesalers' efficiency. The general conclusions by Federal Reserve districts as to the cost of doing business are shown in the subjoined table, briefly stated as indicating the general analysis of cost for the whole 322 firms (based on net sales at 100 per cent):

	Low- est %	High- est %	Com- mon %
Total salesforce.....	0.3	4.6	2.1
Advertising .....		1.1	0.05
Other selling .....	0.01	1.6	0.05
Total selling .....	0.5	5.0	2.2
Wages of receiving and shipping force...	0.1	2.7	1.1
Packing cases and wrappings .....	0.01	1.4	0.05
Outward freight, ex- press and cartage...	0.01	2.8	0.4
Total rec. and shipping...	0.4	4.8	1.6
Executive salaries (in- cluding buying) ....	0.1	4.0	0.9
Office salaries .....	0.2	2.8	0.8
Office sup. and post....	0.02	0.8	0.2
Telephone & telegraph...	0.01	0.3	0.04
Credit and collection...	0.01	0.3	0.04
Other buying and man- agement .....	0.01	0.7	0.1
Total buying and man- agement .....	0.9	5.9	2.1
Rent .....	0.1	1.5	0.3
Heat, light and power...	0.01	0.4	0.05
Taxes (exc. on bldgs., income and profits)...	0.02	0.6	0.3
Insurance (except on buildings) .....	0.02	0.4	0.2
Repairs of equipment...	0.01	0.6	0.05
Deprec. of equipment...	0.01	0.7	0.2
Total interest .....	0.5	3.2	1.6
Total fixed charges and upkeep .....	1.2	5.1	2.7
Miscellaneous .....	0.01	3.7	0.2
Losses from bad debts...	0.01	2.5	0.2

Total expense .....5.0 17.4 9.0

A special compilation of data from cities of various size tend to show that it is not true, as commonly supposed, that costs of doing business are less in larger cities by reason of the larger transactions. The facts appear to be that costs are greater in the larger cities, the figures being as follows; the most notable item being in sales force:

Return and population	Per cent
247 cities of less than 100,000.....	8.8
50 cities of from 100,000 to 749,000..	9.0
25 cities of over 750,000.....	11.3

It does not appear to be a fact that volume of business governs with any regularity, the percentage of cost of doing business being somewhat negative of conclusions, the following classifications being illustrative:

Volume of business	Per cent
35 less than \$500,000.....	9.5
96 from \$500,000 to \$999,000.....	8.9
68 \$1,000,000 to \$1,500,000 .....	8.6
37 \$1,500,000 to \$2,000,000 .....	8.6
86 \$2,000,000 and over .....	9.3

There appears, also, to have been an erroneous impression regarding the rapidly mounting cost of doing business by years, the figures showing surprisingly small difference. The report says of this:

The last five years covered a period of abnormally severe business changes; first a period of expansion, then war-time control, then a period of general business activity in 1919, and the severe drop in prices and depression in 1920. The changes that have taken place in operating expenses in the wholesale grocery trade during this period are of unusual interest.

"The Bureau has had complete reports from forty-three firms for this entire period. The average net sales per firm for this group were as follows: 1916, \$1,363,000; 1917, \$1,692,000; 1918, \$1,907,000; 1919, \$2,314,000; 1920, \$2,606,000. The annual common figures for the more important items of expense for these forty-three firms are shown in the following table:

	1916	1917	1918	1919	1920
	%	%	%	%	%
Total salesforce...	2.7	2.4	2.5	2.2	2.2
Wages of rec. and shipping force...	1.1	1.0	1.1	1.1	1.1
Outward frgt., exp. and cartage ....	0.5	0.4	0.4	0.4	0.4
Executive salaries...	0.8	0.7	0.8	0.8	0.7
Office salaries.....	0.7	0.7	0.7	0.8	0.7
Total buying and management ....	2.1	2.1	1.9	2.0	1.8
Rent .....	0.3	0.3	0.3	0.3	0.3
Total interest ....	1.6	1.5	1.5	1.7	1.6
Total fixed charges and upkeep .....	2.6	2.5	2.4	2.6	2.5
Losses—bad debts	0.3	0.2	0.2	0.1	0.2

Total expense..10.0 9.3 9.4 9.3 9.0

Gross profit according to the standard accounting system, is determined by deducting net cost of merchandise sold from net sales. It is the amount out of which expenses must be paid and in normal years a net profit obtained. Net profit is the amount that remains after deducting total expense from gross profit. If total expense is greater than gross profit, the result is a net loss. The highest, lowest and common figures for gross profit and for net profit or loss in the 322 firms from which reports were received in 1920 were as follows:

Highest—	Per cent
Gross profit .....	14.2
Net profit .....	4.3
Lowest—	
Gross loss .....	3.0
Net loss .....	9.9
Common—	
Gross profit .....	8.5
Net loss .....	0.5

The common figures for gross profit and net profit or loss in the several Federal Reserve districts were as follows:

District	Gross Profit	Net Profit or Loss
Boston .....	9.2%	Loss 0.1%
New York .....	7.7	Loss 0.7
Philadelphia .....	8.5	Loss 1.2
Cleveland .....	7.1	Loss 0.9
Richmond .....	8.5	Loss 0.1
Atlanta .....	8.6	Loss 0.6
Chicago .....	7.2	Loss 1.2
St. Louis .....	9.0	Loss 0.5
Minneapolis .....	9.8	Loss 0.5
Kansas City .....	9.3	Loss 0.4
Dallas .....	10.4	Loss 0.2
San Francisco .....	9.1	Profit 0.4

The common figure for gross profit for wholesale grocers located in cities with a population less than 100,000 was 8.3 per cent of net sales in 1920, and for net loss 0.5 per cent; in cities with a population from 100,000 to 749,000, gross profit was 8.5 per cent and net loss 0.5 per cent; in the cities with a population of 750,000 and over, the common figure for gross profit was 10.2 per cent and for net loss 1.1 per cent of net sales.

Taking the figures for the forty-three firms from which complete reports have been received for the last five years, marked decline in the percentage of gross profit is indicated as follows:

	Gross Profit, Per Cent	Net Profit or Loss Per Cent
1916.....	13.3	Profit 3.3
1917.....	13.5	Profit 4.2
1918.....	11.5	Profit 2.1
1919.....	11.5	Profit 2.2
1920.....	8.2	Loss 0.8

The lowest rate of stock-turn shown on the reports received for the year 1920 was 2.5 times, the highest was 15.6 times and the common figure 6.1 times.

The common figures for the rate of stock-turn in the Federal Reserve districts were as follows:

District	Stock-turn times	District	Stock-turn times
Chicago .....	6.5	New York .....	6.1
St. Louis .....	6.8	Philadelphia ...	5.8
Minneapolis ...	5.3	Cleveland .....	6.1
Kansas City ..	5.4	Richmond .....	5.3
San Francisco..	6.2	Atlanta .....	6.9
Boston .....	6.1	Dallas .....	6.7

The common figure for stock-turn of the wholesale grocers located in cities with less than 100,000 population was 6 times in 1920, in cities with a population from 100,000 to 749,000 it was 6.2 times, it was also 6.2 times in cities with a population of 750,000 and over.

The rate of stock-turn for the various groups of firms classified according to volume of sales was as follows:

Volume of Net Sales	Stock-turn times.
Less than \$500,000 .....	6.0
\$500,000-999,000 .....	5.7
\$1,000,000-1,499,000 .....	6.3
\$1,500,000-1,999,000 .....	6.1
\$2,000,000 and over .....	6.5

A comparison of the figures for stock-turn with those published in the previous bulletins on the wholesale grocery trade indicates that the rate of stock-turn generally was higher in 1920 than in previous years for which figures have been obtained, as follows:

1916, 6.0 times; 1917, 5.9 times; 1918, 5.2 times; 1919, 5.0 times; 1920, 6.3 times.

These figures suggest a tendency for the rate of stock-turn to slacken gradually on the rising market, the rate ap-



parently being lowest in the year of highest prices and the greatest business activity. The marked increase in the rate of stock-turn in 1920 reflects a decline in prices which resulted in curtailment of buying and unusual efforts to keep inventories at a low point.

Information was obtained regarding the number of salesmen employed by each firm in 1920. These figures have been used to determine the average annual sales per salesman. As in other instances where similar tests have been made, this comparison indicates that the sales force expense varied inversely with the sales per salesman. The common figure for average annual sales per salesman in each of the Federal Reserve districts was as follows:

District	Annual sales per Salesman
Boston .....	\$186,000
New York .....	180,000
Philadelphia .....	175,000
Cleveland .....	210,000
Richmond .....	196,000
Atlanta .....	186,000
Chicago .....	179,000
St. Louis .....	142,000
Minneapolis .....	148,000
Kansas City .....	144,000
Dallas .....	183,000
San Francisco .....	186,000

The following table shows the ratio of current assets to current liabilities, with the number of firms in each ratio group. This table indicates, for example, that for ninety-seven firms the current assets were from 2 to 2.9 times the current liabilities. These figures indicate that the ratio of current assets to current liabilities on December 31, 1920, generally was higher than at the end of the previous year. Obviously, this suggests healthy progress in readjustment to new conditions in a period of depression:

Ratio	All firms reporting 1920	Firms reporting in both years 1919	1920
Less than 1.0.....	1	1	0
1.0-1.9 .....	86	30	24
2.0-2.9 .....	97	32	31
3.0-3.9 .....	41	9	13
4.0-4.9 .....	10	6	2
5.0-5.9 .....	12	4	2
6.0 and over .....	53	7	17
Total number of firms .....	300	89	89

### Italian Government Relaxes Certain Export Embargoes

According to a cablegram from the Italian Ministry of Finance in Rome, the Italian Government has authorized the unlimited exportation of the following commodities: The following brands of cheese: Sicilian, Basilicata, Apuglian, Calabrian, Caciocavalli, and Provoloni; powdered milk; oil seeds and nuts.

The exportation of the following commodities in limited quantities is also authorized: Gorgonzola cheese (soft), kidney beans, chickpeas, lentils, peas, vetch, and beans of last year's harvest.

The Sardinian customs authorities are authorized to permit within its proportional amounts the exportation of Sardinian cheese of the Roman type.

## Record Exports of Our Breadstuffs

### Largest Total in History Reached in the Fiscal Year Just Ended

The United States made its highest record in supplying breadstuffs to the world in the fiscal year just ended. Of wheat, which the world must have, and will find some way of buying irrespective of other conditions, the exports were the "biggest ever," totaling in round terms 365,000,000 bushels, an average of 1,000,000 bushels a day for the full year, as against a former high record of 332,000,000 in the fiscal year 1915. Of corn the export record of the year was far above the average of the past decade, and in rye, which we no longer use for distillation purposes, and on which the world's chief producing areas in Russia, Poland and Germany have been cut off from world markets, our exports in 1921 far exceeded that of any earlier year.

The United States has surprised itself and certain of its economists, says a statement by the National City Bank of New York, by supplying to the outside world more breadstuffs than in any earlier year, despite the current belief that with the growth of our own consuming population the quantity we should be able to spare for other parts of the world would decline. Wheat exports for the fiscal year 1921, including flour in terms of wheat, total approximately 365,000,000 bushels; corn over 60,000,000; rye nearly 50,000,000, and of rice, of which we were until recent years very small producers and large importers, the exports of the year total over 400,000,000 pounds, and are larger than those of any earlier year except 1920. Of course this large distribution of wheat by the United States has been due in some degree to the fact that the wheat imports of the year have been larger than ever, aggregating nearly 60,000,000 bushels as against the former high record of about 30,000,000 bushels in 1918, but nevertheless the quantity of genuine United States wheat passing to the outside world is far in excess of any earlier year, and the proportion of the 1920 crop which we have sent abroad in the fiscal year 1921 is probably larger than in any earlier year, despite the considerable "carry-over" from the 1919 crop.

Europe, of course, took the bulk of this high record total of our wheat exports in the fiscal year just ended. The quantity sent to the United Kingdom alone was slightly more than 100,000,000 bushels as against about 60,000,000 in the immediately preceding year, these figures also including the flour stated in terms of wheat. Italy ranked next to Great Britain, the wheat sent to Italy in the fiscal year 1921 aggregating nearly 60,000,000 bushels as against approximately 30,000,000 in the immediately preceding year; Germany 34,000,000 bushels; France, 25,000,000, and Belgium 25,000,000 bushels. Of the 365,000,000 bushels exported in the fiscal year 1920, Europe took slightly more than 300,000,000 bushels, the remainder going to Canada, Latin America, Asia, Africa, and the Pacific Islands, but chiefly in the

form of flour. The percentage of the wheat exports which went in the form of flour in 1921 is exceptionally low, as is usually the case when very large quantities of wheat are being exported, the proportion of the total exports which our millers turn into flour before its distribution being smaller in years of heavy exportations than in those in which the total quantity of wheat exported is small.

While the price per bushel at which the exports of 1921 went abroad averaged less than in 1920, the total value (flour) were only 220,000,000 bushels as against 365,000,000 in the fiscal year just of our wheat exports in the year just ended far exceeds that of any earlier year, totaling about \$840,000,000 (including flour in terms of wheat) against \$693,000,000 in 1919, the former high record year. During the actual operations of the war the value of wheat and flour exports never passed the \$400,000,000 line except in 1915 when it stood at \$429,000,000. The price at which United States wheat has been exported in recent years average 95 cents a bushel in 1914; \$1.25 in 1915 and 1916; \$1.99 in 1917; \$2.37 in 1918 and 1919; \$2.50 in 1920, and in the fiscal year 1921 ranged downward from \$2.96 per bushel in July, 1920, to \$2.13 in January, 1921; \$2.96 per bushel in February; \$1.92 in March; \$1.67 in April, and \$1.60 in May, the latest month for which official figures of price exportation are available. Wheat exports in the seven years since the beginning of the war are two and one-half times as much as in the seven years preceding the war.

### Hints on Protecting Cereals from Insects

In an attempt to prevent the loss of millions of dollars annually to cereal manufacturers through damage caused by weevils and other insects, the cereal division of the American Specialty Manufacturers' Association has issued a list of suggestions for handlers of cereals.

1. Do not pile new stock in front of old.
2. As soon as a shipment of cereals is received, mark the month received on each case—figures can be used for this purpose for May use the figure "5," June, "6," July, "7," and so on. This will enable you to know whether or not your floormen are piling new stock in front of old.
3. Have floor clean—a good scrubbing with soap and water at stated intervals is urged.
4. Sprinkle lime on floor and in cracks.
5. Clean up on broken cases—do not leave open cases or packages in regular stock—place them in your packing room, which should at all times be kept clean and stock examined at stated intervals.
6. Do not overstock at any time, especially not in the spring or summer months.
7. A good plan is to change space at stated intervals and not always have it in the same place. It is also well not to pile the different cereal together—a row of canned goods in between is advisable.
8. We suggest that once or twice a year your warehouse be most thoroughly fumigated. This will not only clean up the cereals, but also get rid of mice and rats.



## Wholesale Grocers' Committees Named

President Herscher Appoints Members for Important Work During the Year

President Herscher of the National Wholesale Grocers' Association has issued a pamphlet announcing his committees for the ensuing year and defining the general scope of their work. The provinces of the committees and their respective chairmen are as follows:

Pure food and legislative—Enactment and enforcement of uniform and effective pure food laws—uniformity of all commercial laws—bills of lading—metric system.—W. C. McConaughy, chairman, the Star Grocer Company, Parkersburg, W. Va.

Federal trade commission—Aid to the commission upon subjects affecting the food trade.—Arjay Davies, chairman; Davies-Strauss-Stauffer Company, Easton, Pa.

Foreign trade relations—Investigation of export and import business.—F. T. Fischer, chairman; Fischer Bros. Company, Seattle, Wash.

Postal service—Federal postal service in its relation to business.—Oscar B. McGlasson, chairman; McNeil & Higgins Company, Chicago, Ill.

Metric system—Promoting plans to secure the general adoption of the metric system of weights and measures.—Arthur P. Williams, chairman; R. C. Williams & Co., New York City.

Canners' conference—National Canners' Association, National Food Brokers' Association. Conference with canners and brokers on questions of mutual interest.—R. A. Horr, chairman; Stone-Ordean-Wells Company, Duluth, Minn.

Chamber of Commerce of the United States—Representation at meetings. Co-operation upon subjects affecting the wholesale grocery trade. Theodore F. Whitmarsh, National Councillor; Francis H. Leggett & Company, New York City.

Economy Conference—American Specialty Manufacturers' Association, National Association of Retail Grocers. Conference with manufacturers, wholesalers and retailers that food products may be distributed with the greatest economy to merchant and consumer. John W. Morey, chairman; The Morey Mercantile Company, Denver, Colo.

Contracts—Uniform, clear and equitable forms of contract for purchase of commodities, without relation however, to prices or costs. Prevention of sales litigation.—W. L. Juhring, chairman; R. C. Williams & Company, New York City.

Discount for cash—Banking branches of merchandising—Prompt payment of bills, etc.—B. D. Crane, chairman; Reynolds Davis Grocery Company, Fort Smith, Ark.

Education—Diffusion of information to the public concerning the association and the wholesale grocer. Investigation and instruction regarding business methods, economy services and needs of wholesalers and retailers. Publication of the Bulletin. Study of retailers' problems. Diffusion of helpful information.—E. F. Brewster, Jr., chairman; Brewster, Gordon & Company, Rochester, N. Y.

Cost Research and Statistical—Practical studies of wholesale grocers' costs.

Improved systems of cost accounting. Co-operation with cost work accounting. Co-operation with cost work of Federal Trade Commission and Harvard University. Compilation and publication of statistics of grocery business as permanent records for information and benefit of members.—Guy W. Rouse, chairman; Worden Grocer Company, Grand Rapids, Mich.

Education of the Jobber—Study of problems arising in wholesale grocery houses and suggestions for improvement to promote economy and efficiency.—O. J. Moore, chairman; O. J. Moore Grocery Company, Sioux City, Iowa.

Containers—Better containers, packages of more convenient size for trade and public.—Roy L. Davidson, chairman; M. O'Connor & Company, Indianapolis, Ind.

Fire Prevention—Study of fire waste and education regarding most approved methods of prevention.—D. C. Shaw, chairman; D. C. Shaw & Company, Pittsburgh, Pa.

Railroad Service—Douglas H. Bethard, chairman; Jobst Bethard Company, Peoria, Ill.; J. C. Lester, vice chairman; Ridenour-Baker Grocery Company, Kansas City, Mo.

Ways and Means—C. H. Pickens, chairman; Paxton & Gallagher Company Omaha, Neb.

Resolutions—Consideration and presentation of all resolutions for action at annual or special meetings.—W. C. McConaughy, chairman; The Star Grocer Company, Parkersburg, W. Va.

Membership—Qualifications for membership in the National Wholesale Grocers' Association. "Any person, firm or corporation engaged in the wholesale grocery business is eligible to membership. In determining eligibility the term 'Wholesale Grocer' shall be construed as being a person, firm or corporation which distributes goods to wholesalers and retailers, but which does not sell goods to consumers. No syndicate or combination of retailers shall be eligible to membership." Application blanks may be obtained from headquarters; on the reverse side of the blank will be found the schedule of dues.—B. B. Cushman, chairman; National Grocer Company, Detroit, Mich., and three or more members in each state.

Arbitration.—Arbitration system for settlement of all business disputes.—Austin L. Baker, chairman; Eldridge, Baker Company, Boston, Mass.; Bert Dickens, Franklin MacVeagh & Co., Chicago, Ill.; D. C. Shaw, D. C. Shaw & Company, Pittsburgh, Pa.; E. H. Sayre, R. C. Williams & Company, New York City; H. A. Marr, The H. A. Marr Grocery Company, Denver, Colo.; Leslie Lieber, Haas-Lieber Grocery Company, St. Louis, Mo.; Jacob Blumlein, Sussman, Wormser & Company, San Francisco, Cal.; Albert Mackie, Albert Mackie Company, Ltd., New Orleans, La.; F. T. Fischer, Fischer Bros., Seattle, Wash.; F. H. Smithmeyer, Theodore Poehler Mercantile Company, Lawrence, Kan.

## 1920 Food Exports Make Large Total

Grain, Dairy and Meat Products Double that of Pre-War Years Figured on Tonnage Basis

BY U. S. BUREAU of Markets

Figured on a tonnage basis, the exports of grain, dairy products, and meat products during the calendar year 1920 were double the exports of any pre-war year, while the exports of cotton were below normal, according to data compiled by the U. S. Bureau of Markets and Crop Estimates. In fact, the exports of cotton in 1920 amounted to only about three-fourths of the exports in any pre-war year.

Grain, dairy products, meat products, and cotton are selected for this article, inasmuch as these commodities constituted in value nearly 78 per cent of the agricultural exports of the United States in 1920, cotton alone constituting about 32 per cent and the other items about 46 per cent.

In relation to this country's total production of grain, meat products, and dairy products the exports of these commodities in pre-war years constituted about 5 per cent, 8 per cent, and 1 per cent, respectively, of such total production.

### Domestic Markets Control

In view of the heavy export trade during 1920 in the commodities covered by this article, some surprise has been expressed in many quarters at the steady downward trend of their prices. But when it is realized that domestic market conditions are a larger factor in determining prices than are exports the steady drop in prices which these commodities have undergone is more easily explained.

As for the domestic markets it is a matter of very general knowledge that the milling demand for wheat has been below normal until very recently while the home market has been oversupplied rather than under-supplied with both meat and dairy products. Moreover, the purchasing of American wheat for export has, up to within the last month or two, been carried on largely by a few foreign government agencies.

Naturally this placed these buyers, and domestic buyers as well, in a very strong position in the markets, and naturally the buyers were interested in making their purchases at the lowest possible prices.

A brief analysis has been prepared comparing pre-war exports with exports for 1920 and the past five months of 1921. Table 1 shows the production and exports of the principal commodities for the pre-war period of 1910 to 1914, inclusive, and for the post-war year of 1920. In 1920 the production of grain in the United States was 19 per cent above the average pre-war production, and the exports were about twice as large. Wheat showed the most notable increase, the exports for 1920 being two and one-half times greater than pre-war exports. This was, no doubt, due largely to the fact that Russia, which in pre-war years furnished western Europe with one-half of its wheat imports, has been entirely out of the market, while the United States had a large carryover from the previous crop as well as heavy imports from Canada. As a result of the exports for the past year, the United States reserve is now rather low and with a normal crop this year this country cannot furnish Europe with an amount in 1921 equal to the amount furnished in 1920.



Exports of dairy products in 1920 showed a large increase over pre-war years, almost eight times as much having been exoprted in 1920 as in any year prior to 1915. Exports of meat and meat products, while only about half as much in 1920 as for the two immediately previous years, are still 50 per cent above pre-war figures. About four-fifths of the exports consisted of pork and lard. While exports were much larger than in pre-war years, yet the supply retained for consumption in this country was above normal, due to the large increase in production during the war period. The production of grain in 1920 represented an increase of 19 per cent over pre-war production, the production of milk 36 per cent, and the production of meat 8 per cent.

Table 2 shows exports for the first five months of 1920 and of 1921 compared with the same months in pre-war years. The export of grain is a remarkable feature of American export trade in recent months. Exports for the first five months of 1921 were not only 60 per cent greater than for the same period in 1920 but were equal to a whole year's exports in the pre-war period. The exports of lard also have been very high in recent months. Exports of pork products, however, were less than last year's although still practically twice pre-war exports.

Payments Total \$2,759,573,000

Foreign countries during 1920 paid the United States for grain, cotton, dairy, and meat products about \$2,759,573,000, or more than three times the pre-war average of \$848,338,000. Considering the impoverished condition of many European countries and the depreciated rate of foreign exchange, it is rather remarkable that these countries have been able to pay this large amount of money for food products. That they were able to do it was no doubt due in part to the very liberal credits which have been extended by American exporters and Amer-products by Europe was the lower con-ican financial institutions.

In contrast to the large taking of food sumption of cotton and wool. This indicates obviously that the need of food was more pressing than the need for textiles. This in turn was probably due to the fact that in times of necessity the amount of new clothing required can be reduced to a much greater degree without discomfort than can the amount of standard food products.

Table 1—Exports of Agricultural Products of the United States for 1920 Compared with Pre-war Normals (Amounts in thousands; i. e., 000 omitted)

Commodity	Average 1910-1914				1920		Change from Pre-war	
	Production	Amount	Per Cent	Exports	Production	Exports		
Wheat .....bus .	728,225	<sup>1</sup> 128,158	17.6	787,128	307,623	39.1	+	179,465
Corn .....bus..	2,723,457	<sup>1</sup> 40,835	1.5	3,232,367	21,230	.7	—	19,605
Oats .....bus..	1,157,961	<sup>1</sup> 16,320	1.4	1,526,055	16,311	1.1	—	9
Barley .....bus..	186,208	<sup>1</sup> 10,201	5.5	202,024	17,854	8.8	+	7,653
Rye .....bus..	37,568	<sup>1</sup> 2,155	5.7	69,318	59,253	85.5	+	57,098
Rice <sup>2</sup> .....bus..	24,378	423	1.7	53,710	6,436	12.0	+	6,013
Buckwheat ....bus..	17,022	52	.3	13,789	300	2.2	+	248
Total grains ....lbs..	247,111,750	11,137,069	4.5	294,591,134	24,750,408	8.4	+	13,613,339
Dairy products in terms of milk.lbs.. <sup>3</sup> 66,000,000								
		185,641	.3	90,000,000	1,557,853	1.7	+	1,372,212
Meats and meat products .....lbs..								
	14,857,800	1,230,867	8.3	16,051,000	1,879,679	11.7	+	649
Lark <sup>4</sup> .....lbs..	1,613,800	514,408	31.9	1,936,000	635,488	32.8	+	121,080
Pork <sup>5</sup> .....lbs..	7,060,200	398,974	5.7	8,470,000	900,739	10.6	+	501,765
Cotton 500-lb. bales..	14,259	8,579	60.2	13,366	6,359	47.6	—	2,220

<sup>1</sup>Including flour and meal exprese in terms of grain equivalent.

<sup>2</sup>In terms of cleaned rice.

<sup>3</sup>Estimated from Bureau of the Census figures for 1909.

<sup>4</sup>Includes neutral lard.

<sup>5</sup>Pork—corned, fresh and pickled—bacou, hams and shoulders.

Condemns Jobbers' Private Brands

R. J. MacDonald, of Georgia Wholesale Grocers' Association, Discusses Them

R. J. MacDonald, secretary of the Georgia Wholesale Grocers' Association, seems to have placed his finger upon jobbers' private brands as the weak link in the chain of food distribution. In a bulletin he has issued to that effect he says:

"Is there any justification for a whole-sale grocer having private brands of merchandise?

"What is there that can be said in favor of private brands?

"Are they of any benefit to the consumer?

"No! The consumer never gets better, and invariably gets less value for his money when buying the jobber's private brand. Surely no one can contend that the consumer is ever benefited by a private brand.

"What can be said in favor of private brands for the retailer?

"Again they are a detriment. I know a retail merchant in this town who has had the private brand mania. He is practically broke. It has taken all his money to pay the wholesale grocer in New York, whose private labels he has the 'exclusive' on, and he has nothing to pay his local jobbers with. Eventually this disease will kill any retailer who gets it bad enough.

"It stands to reason that a retail grocer cannot compete with another retail grocer in the same town and give as good value to th econsumer if the one buys private brands from some far away market like Chicago or New York, with all the added expense, and the other buys quick selling, well established and well known brands of known quality (something that is always a question in a private brand), from his local jobber.

"There is no doubt that the retailer's fancied advantage of having an exclu-

sive brand is only a means of deceiving people about quality, for there never was a private brand packed which was better than that of the manufacturer. When the retail grocer asks more for the private brand which he controls than his competitor does for the manufacturer's brand, he is merely deceiving his customers.

"Turn-over is the vital element in the retail grocer's business today, but he can never have turn-over when he buys from some jobber getting 'exclusive' on his private label, for, in order to get this fancied advantage of exclusive rights, he has to buy in quantities which are unnecessarily large and uneconomic, and he is dependent on one house for his source of supply. It is therefore an undoubted fact that private brands are detrimental to the retail grocer functioning economically in the interest of the consumer, and are unprofitable to himself personally.

"What value are private labels to the wholesale grocer?

"Taking the wholesale grocery trade as a whole they are at a tremendous disadvantage. There is no doubt that all wholesale grocers would get a much larger resale margin; there is no doubt that all manufacturers would make strenuous efforts to uphold their resale prices, and there is no doubt there would not be anything like the cutting of prices in the wholesale grocery trade if the minority of wholesale grocers who, at present, try to compete with the manufacturer by packing their own merchandise, who are desirous of burning the candle of profit at both ends, were to cease this unfair practice. Men, we are either wholesale grocers or we are not. If we are wholesale grocers we are not manufacturers or packers. If we are manufacturers and packers the sooner we get out of the dual position of being both a packer and a distributor, and either cease distributing or cease complaining that the manufacturer does the natural and only logical thing to protect his interests by selling our customers direct, since we have become his competitor, the better.

"Private brands are merely a deception. They are only a means to deceive the public. They are frequently a means of placing inferior merchandise in competition with superior as being 'just as good,' or are the means of making the public pay a higher price for the same goods packed under the manufacturer's label."

George Livingston, Bureau of Markets Chief, Resigns

George Livingston, chief of the Bureau of Markets, United States Department of Agriculture, has tendered his resignation to Secretary Wallace. Mr. Livingston has several business opportunities under consideration, but has not yet made a decision with regard to them. Secretary Wallace has asked Mr. Livingston to continue to assist the department for a few months as a consulting specialist in marketing.

Foreign Trade Opportunity

E. Riordan & Sons, Main street, Clogheen County, Tipperary, Ireland, wish to have wholesale grocers in the United States send them catalogs and price lists.



## Fred Mason and W. H. Lipe Vice-Presidents of Sugar Company

Earl D. Babst, president of the American Sugar Refining Company, New York, announced recently that in view of the broadening activities of the company it had become desirable to increase the number of executive officers of the company and, accordingly, the board of directors elected as vice-presidents Fred Mason, president of the Shredded Wheat Biscuit Company, and Walter H. Lipe, for many years vice president and general manager of the Beechnut Packing Company.

Fred Mason has been a grocer or associated with grocers all his life and has for years past been one of the best known men in the trade. As a boy of eight he drove a retail grocer's delivery wagon, then became a retail grocer, a jobbers' salesman, a flour salesman and finally secretary of retail grocery associations. He was at one time secretary of the St. Paul retailers, then State secretary of Minnesota retailers, and finally secretary of the National Retail Grocers' Association, in which position he made an enviable record for organization work. In 1907 he resigned from secretarial work and became special representative and later assistant salesmanager of the Diamond Match Company. In 1910 he became general salesmanager of the Shredded Wheat Company of Niagara Falls and later president and general manager of the company. His accomplishments with that concern are too well known to require recounting.

Mr. Lipe is almost as well known as Mr. Mason, though his field of activity in food trade circles has been less diversified. He was one of the pioneers who started the Beechnut Packing Company in a little up-State New York town and made it a concern of international repute. He has always been its general manager and in charge of its trade contact till a few months ago when he disposed of his interests at a highly advantageous figure and retired temporarily from active business. Like Mr. Mason, he is acquainted with the grocery trade in a national and international way, its problems and intricacies, and will be a strong power in adding popularity to the sugar company's distributive relations.

By a singular coincidence both men have long been predominant figures in the American Specialty Manufacturers' Association, Mr. Mason being at present president of the association and Mr. Lipe having served as president several terms a few years ago and still being active in its management. Both men have always been firm friends of selling through "legitimate channels" and many in the food trades regard their selection as significant for that reason.

### Decline in Value of Meat Exports

Official figures recently published by the Institute of American Meat Packers indicate that exports of meat during the fiscal year just ended were only a fifth smaller in quantity than during the fiscal year 1920, but the value was less by almost one-half.

The statement says:

"Total exports of meat products during the twelve months ending June 30, amounted to 1,667,050,642 pounds, worth

\$314,649,660, as compared with 2,066,995,889 pounds, worth \$584,879,166 for the same period in 1920. This decline in value of nearly \$300,000,000 reflects graphically the decline which has occurred in wholesale meat prices during the last year.

"Exports for the month of June, 1921, as compared with June last year shrunk only 12 per cent in quantity, but the value declined more than a half.

"Although the United States imports small quantities of meat products from other countries, they are relatively unimportant, since this is by far the greatest meat producing country in the world. Import figures for the twelve-month period ending June 30 are not available, but imports for the calendar year 1920 totaled only 160,000,000 pounds, apparently a large amount numerically, but actually less than nine-tenths of one per cent of the total amount of meat produced in this country last year (17,987,000,000 pounds) or only about a pound and a half for each inhabitant."

### Canadian Sanitary Can Company Organizes

The Canadian Sanitary Can Company, Limited, Toronto, Ont., has just completed its organization and will be in operation within the next few months manufacturing sanitary solderless, scaled food or packers' cans, nonleakable friction-top paint cans, oil, cocoa and various other styles of tin and metal cans or containers.

They will occupy approximately 20,000 square feet of floor space, and will install the latest automatic labor-saving machinery.

The capitalization of the Canadian Sanitary Can Company, Limited, is \$400,000. The officers are: James Dixon, president; Hry. S. Gooderham, vice president; Geo. H. Babcock, managing director; B. N. Barrett, secretary-treasurer; directors W. H. Millman, W. M. Turnley, J. Gault Kingsmill.

### Wichita to Have Dehydrating Plant

The business men of Wichita, Kansas, have organized a company known as the Wichita Dehydrated Products Company and have named J. H. Elem, president; S. M. Sholl, vice president and secretary; R. M. Mackey, treasurer; and Thomas C. Naylor, fiscal agent. A plant is now being constructed, designed to handle fifty tons of fresh fruits and vegetables per day, with the drying tunnel built in accordance with the patent issued to Hammond. It is proposed to operate this season principally of the drying of pumpkins for pumpkin flour.

### Minnesota Canneries Suspend

As a result of the high cost of transportation and cans, coupled with the fact that there is a surplus of something like 3,000,000 cans of corn in the United States, more than one-third of the thirty canneries in Minnesota will not operate this year.

Chris Heen, commissioner of the state dairy and food department declared that as tin and steel had gone up in price a year ago and had not yet come down and canning was still one of the infant industries of Minnesota they were not yet in a position to combat a combination of high transportation and stock surplus of commodities.

## American Canned Fruits Prove Popular in Scandinavia

A survey of the dried and canned fruit business in Scandinavian countries finds American canned and dried fruits easily in first place and enjoying continued popularity, reports the American agricultural trade commissioner at London. There is practically no complaint against the quality of American canned goods, most of which is sold by agents, but prices are considered too high.

The Danish markets are well supplied with both dried and canned peaches, pears, apricots and plums. Dried fruits meet with especially good demand in Denmark, notably prunes and apricots from California and half pears and evaporated ring apples from New York and California.

The Norwegian market for dried and canned goods is also very good. Fruit is scarce in Norway, and dried fruits are especially popular. Outside of the large cities, however, the Norwegian population does not draw heavily on the United States for fancy canned fruits, although considerable quantities of dried fruits are taken.

The market for American canned and dried fruit is temporarily cut off in Sweden. Some time ago speculators flooded the country with both dried and canned fruits which were originally intended for Finland. The Finnish markets, however, did not materialize, and as a result Sweden is flooded with dried and canned fruit in good condition, selling at less than cost. This oversupply, however, has resulted in the extensive introduction of American dried and canned goods to the Swedish laborers, and dealers are of the opinion that the supply on hand will be exhausted by the end of September.

Scandinavian countries have but one objection to American fruit and that is that the price is too high. South African fruit is selling considerably under American prices. Although the South African fruit is recognized as inferior to the American, the former is being improved in regard to both the grade and quality of pack.

American exporters should bear in mind that the three Scandinavian countries are each separate and distinct and with rival commercial ambitions. Each country desires to purchase from the United States and not only wishes to deal directly with this country, but wishes also to have the goods delivered direct to its own ports and, if possible, in its own ships. More success will be attained if all quotations are made c. i. f. Scandinavian ports instead of c. i. f. New York.

In the matter of packing it is urgently necessary that the boxes be wired or iron strapped. This prevents breakage and pilferage. The metric system of weights should be used as this conforms to the customs of Scandinavian countries and eliminates confusion.

### Bureaus of Markets and Crop Estimates Combine

The United States Bureau of Markets and the Bureau of Crop Estimates have been consolidated. Leon M. Estabrook, formerly chief of the Estimates Bureau, and now associate chief of the markets sections, will supervise both.



## Canadian Fishery Statistics for 1920

Figures from the preliminary report of the Dominion Bureau of Statistics on the value of the catch of the fisheries of Canada in 1920 are at hand, and indicate a decrease from the preceding year of \$7,187,262. The total value of the 1920 catch is listed as \$49,321,217. Of this total, British Columbia is credited with \$22,329,161, Nova Scotia with \$12,742,659, New Brunswick with \$4,423,745, Ontario with \$3,419,757, Quebec with \$2,591,982, Prince Edward Island with \$1,714,663, Manitoba with \$1,249,607, Alberta with \$529,078, Saskatchewan with \$296,472, and Yukon with \$33,100.

The share contributed to the year's totals by the chief commercial fishes were:

Kind of fish	Value
Salmon .....	\$15,595,970
LOBSTERS .....	7,152,455
Cod .....	6,270,171
Halibut .....	4,535,188
Herring .....	3,337,738
Whitefish .....	1,992,107
Haddock .....	1,522,680
Mackerel .....	1,126,703
Trout .....	858,042
Sardines .....	860,268
Smelts .....	789,361
Pickrel .....	682,277
Pilchards .....	540,265

Some interesting facts concerning the disposal of the commercial fish are included in the report. During the year 1,284,729 hundredweight of salmon were caught. From this catch 1,188,599 cases of canned salmon were obtained. In addition, 219,571 hundredweight were used fresh, 33,645 hundredweight were dry salted, 8,924 cases were mild cured, 2,667 hundredweight were smoked, and 526 hundredweight were pickled. Of the total lobster catch of 399,985 hundredweight only 69,000 hundredweight were sold in shell and 163,299 cases were canned. The sardine catch of 196,649 barrels produced 129,925 cases of canned sardines, in addition to 164,100 barrels which were sold fresh and salted. The cod catch of 1,982,706 hundredweight was disposed of as follows: Used fresh, 118,755 hundredweight; green salted, 167,840 hundredweight; smoked fillets, 38,055 hundredweight; dried, 444,776 hundredweight; boneless, 25,547 hundredweight; canned, 3,481 cases; cod roe, 40 hundredweight; codliver oil, 11,040 gallons. The herring catch, which amounted to 2,056,681 hundredweight were sold, as follows: Fresh, 206,381 hundredweight; boneless, 611 hundredweight; canned, 33,769 cases; smoked, 148,304 hundredweight; dry salted, 512,168 hundredweight; pickled, 52,765 barrels; used as bait, 182,675 barrels; fertilizer, 73,729 barrels.

### Ask Protection for Hawaiian Pineapple

Hawaiian pineapple canners will ask Congress to afford them greater protection on canned pineapple. The Fordney bill proposes to establish a duty of  $\frac{3}{4}$  of 1 cent each on fresh pineapples and 20 per cent ad valorem on "pineapples prepared or preserved in any manner." The Hawaiians want still further protection and will urge a duty of 35 to 40 per cent upon Congress with Hawaii specified as strictly American territory.

## Wyoming Dairy Department Fights for Clean Milk

Due to an enactment of the last legislature of Wyoming, Mr. E. E. Davis, of Lovell, Wyoming has been appointed State Dairy Inspector in the Dairy Food and Oil Department.

Recently Mr. Davis, Mr. Colvin, the Deputy Food Commissioner and Mr. C. Stanley Greenbaum, Dairy Food and Oil Commissioner, conducted a series of sediment tests and prosecutions in the Star Valley Section of Wyoming. In an attempt to educate the people there to produce clean milk it was found necessary to have a few prosecutions to bring the matter home to them more forcibly. There were sixteen prosecutions, all of the defendants pleading guilty.

In the fall the Department will undertake to put on a Dairy Exhibit at the State Fair, the first time such a thing was ever attempted by the Dairy Food and Oil Department.

### Establish New Macaroni Brand

In spite of the fact that jobbers asked to take up another standard brand of macaroni have declared the market full to overflowing, the Homac Corporation of Syracuse, N. Y., has succeeded in getting those same jobbers to accept another macaroni.

This was accomplished by giving it a new form, a pleasing shape something like that of a conch shell, only small, so that two or three at a time can be popped into the mouth; by giving it a new flavor and a new name, "Ronettes," a new product has been made out of an old one. By putting it up in an appetizing package and by advertising.

The newspaper advertising is effectively illustrated with smiling faces and Ronettes served in the casserole. The slogan is "That Tempting Macaroni," and Ronettes are described as a new food, in odd and dainty form, rich in vital nourishment, tempting to the most jaded appetite.

### Potato Crop Over 50,000,000 Bushels Less Than Last Year

Potato production for the United States as forecasted July 1 is 376,997,000 bushels, compared with the December estimate of last year's crop at 430,458,000. Forecasts for leading states include Maine, 23,794,000 bushels; New York, 33,566,000; Minnesota, 31,853,000; Wisconsin, 30,929,000; Michigan, 28,502,000; Pennsylvania, 24,806,000; Colorado, 11,985,000; California, 13,540,000; Idaho, 9,505,000; North Dakota, 9,191,000; South Dakota, 6,772,000; Nebraska, 7,031,000; New Jersey, 7,698,000; Virginia, 11,087,000; Kentucky, 4,481,000.

### Selling Raisins on New Plan

Sun-Maid Seedless Raisins are being widely advertised as "The Between-Meal Raisins—the Cure for 3 o'clock Fatigue," by the California Associated Raisin Co., with a membership of 13,000 growers. Distribution of 1½-oz. packages to retail at five cents is being affected through many channels other than the grocery—drug stores, confectioneries, cigar stores, etc., being utilized. The claim is made that each package contains 146 calories of nutriment.

Hans V. Bardeleben, Grosse Barlinge, Hanover, Germany, is interested in importing American meats, preserves and other foods for victualing ships.

## Experts Advise Better Packing for American Fruit Exports

Marketing experts of the Bureau of Markets and Crop Estimates United States Department of Agriculture, say that there is real cause for complaint over the frailty of packages used in shipping American fruits to other countries. Claim is made that compared with the results secured by other countries in export trade, American shippers have much to learn in packing fruits for foreign shipment. Australian apples require about two months in transit to England, but the fruit generally arrives in good shape with little or no breakage or decay. The same is true of South African oranges. Even such tender fruits as apricots and peaches are brought to England from South Africa, not only sound, but free even from the little dents and marks which the American shipper has come to accept as inevitable. Belgian hothouse grapes arrive in England with every berry perfect and the bloom almost untouched.

Barrels are not entirely satisfactory as containers for apples in export shipment, say the bureau's specialists, and it might be worth while to experiment rather extensively with third and half-barrels or with some form of box or crate as a possible and acceptable substitute for the barrel in eastern districts. In any event, there is little excuse for using barrels on which some of the hoops are not fastened, or in which nails protrude to puncture and ruin the fruit.

The bureau's experts state that the practice of wiring export apple and pear boxes has done much to cut down excessive breakage in transit.

### Houston to Have Big Sugar Refinery

A sugar refinery costing approximately \$1,250,000, with a capacity of 600,000 to 1,000,000 pounds of sugar a day and with a payroll of \$1,000 a day is to be established in Houston, Texas, according to W. J. Doyle, industrial land and tax commissioner for the Gulf Coast Lines and the Houston Belt & Terminal Company.

Details of the establishment are practically completed and W. M. Bancroft of the firm of Sugar Mill Machinery Manufacturers, representing a number of his associates, has purchased the old Union Stock Yards, located near the property of the Southern Motors Manufacturing Association, Ltd., between the Southern Pacific Englewood yards and the Galena Signal Oil Company Refinery, for a site on which to erect the sugar refinery, which will occupy 20 acres of the 60-acre tract.

### Turkey Places Duty on Foodstuffs

Flour, cereals and other foodstuffs have been removed from the list of commodities imported free of duty in Turkey, by imperial decree. Effective July 1, 1921, wheat flour, regardless of quantity, will be subject to a specific duty of 95 piasters per 100 kilos, with a duty of 30 piasters per 100 kilo on wheat and other cereals. (The normal value of the piaster is \$0.044; 100 kilos, 220.46 pounds.) The duties on other foodstuffs which were removed at the beginning of the armistice have been restored.



# PRACTICAL BOOKS ON FOOD SUBJECTS

Any of the following books may be ordered from THE AMERICAN FOOD JOURNAL:

**Principles of Nutrition**—W. H. Jordan, Director New York Agricultural Experiment Station.

Aims to show the adjustment of reliable facts to a rational system of nutrition without insisting upon adherence to technical details that are not feasible in the ordinary administration of the family dietary. The treatment is practical as well as scientific. **\$2.50**

**The Newer Knowledge of Nutrition**—E. V. McCollum, of the School of Hygiene and Public Health of Johns Hopkins University.

An authoritative new book that demonstrates beyond argument the great value of milk and dairy products in the human dietary, and shows how these are to be employed in promoting growth, health and vigor. **\$2.50**

**Feeding the Family**—Sm. W. Rose, Ph.D., Assistant Professor in the Department of Nutrition of the Teachers' College, Columbia University.

This is a clear and concise account in simple everyday terms of the ways in which modern knowledge of the science of nutrition may be applied in ordinary life. The food needs of the typical family groups, men, women, infants, children of various ages, are discussed in separate chapters, and many concrete illustrations in the form of food plans and dietaries are included. **\$2.40**

**A Laboratory Handbook of Dietetics**—M. S. Rose, Assistant Professor of Household Arts, Teachers' College, Columbia University.

A series of definite exercises for laboratory work in dietetics, accompanied by problems and explanations of calculations. There is also included a series of reference tables, giving food values for use in laboratory calculations which are in a more convenient form than can be found elsewhere. **\$1.60**

**Chemistry of Food and Nutrition**—H. C. Sherman, Professor of Food Chemistry of Columbia University.

Presents the principles of the chemistry of food and nutrition with special reference to the food requirements of man, and the considerations which should underlie our judgment of the nutritive values of food. **\$2.40**

**The Book of Ice-Cream**—W. W. Fisk, Assistant Professor of Dairy Industry of the New York State College of Agriculture at Cornell University.

The principles of ice-cream making and handling are discussed in this book for the benefit of the student and manufacturer of ice-cream. Discusses the materials used, machinery used, chemistry, marketing, management, etc. **\$3.25**

**Management of Dairy Plants**—M. Mortensen, Professor of Dairying at Iowa State College.

Considers the Form of Organization of the Dairy; Creamery Construction; the Composition of Butter and Overrun; Cost of Manufacturing Butter; Profits Obtained from the Manufacture of Ice Cream; Marketing of Dairy Products; Office Records; Cost of Marketing Dairy Products; Preparing the Butter for Markets; Advertising Dairy Products; Business Correspondence; Credits and Collections; Bookkeeping. **\$2.40**

**The Modern Milk Problem**—J. S. MacNutt.

Practical information as to the control of the milk supply, together with the various means and needs for sanitary supervision in the laboratory and in the field. Grading the milk supply of large and small communities is given special attention. **\$2.00**

**A Manual of Milk Products**—W. A. Stocking, Jr., Professor of Dairy Industry Cornell University.

This "manual" has been prepared for the purpose of bringing together the work of the best authors on the entire subject of milk and its products. Chapters on the Chemical Composition of Milk, The Factors Which Influence Its Composition, Physical Properties of Milk, The Various Tests Used in the Study of Milk, Butter Making, The Cream Supply, Butter Making on the Farm, Cheese Making, and The Bacteriology of Dairy Products. **\$3.00**

**Milk and Its Products**—H. H. Wing, Professor of Animal Husbandry of Cornell.

A scientific but non-technical discussion of the secretion, composition, production and testing of milk, the ferments of milk and their control, determination of bacteria in milk, market and certified milk, separation and refining

of cream, manufacture and marketing of butter and cream, etc. **\$2.50**

**The Commercial Apple Industry of North America**—J. C. Folger, Assistant Secretary of the International Apple Shippers' Association; and Thomson, S. M., formerly Fruit Crop Specialist of the United States Department of Agriculture.

The selection and care of orchards, particularly large commercial crops; extensive treatment of handling, storing and marketing crops. Varieties of apples with their marketable qualities, time of ripening, uses, etc. By-products also discussed. **\$3.50**

**Food Products**—H. C. Sherman.

The first and second chapters deal with the principal constituents and functions of foods and with food legislation; then follow chapters on milk, cheese, and other milk products; eggs, meats and meat products; vegetables, fruits and nuts; edible fats and oils; sugars, molasses, syrups and confectionery; and food adjuncts. **\$2.75**

**Chemistry of Plant and Animal Life**—Harry Snyder, Professor of Agricultural Chemistry of the University of Minnesota.

Discusses the composition of plant and animal bodies, the chemistry of the plant and its food and its growth, the chemistry of human foods and animal nutrition, the digestibility and value of foods. **\$2.25**

**The Book of Cheese**—Thom and Fisk, Investigator of Cheese and formerly of Conn. Agricultural College; Fisk, Assistant Professor Dairy Industry New York State College of Agriculture at Cornell University.

Intended as a guide in the interpretation of the processes of making and handling a series of important varieties of cheese. The kinds here considered are those made commercially in America, or so widely met in the trade that some knowledge of them is necessary. The relation of cheese to milk and to its production and composition has been presented in so far as required for this purpose. The principles and practices underlying all cheese-making have been brought together into a chapter on curd-making. **\$2.40**

**The Food Problem**—Kellogg-Taylor, of the United States Food Administration and Commission for Relief in Belgium and Professor in Stanford University of California; of the United States Food Administration, and Exports Administration Board, and Professor of the University of Pennsylvania.

Part I of this book deals with the food situation of the Western European Countries, and the United States; part two the technology of food use. **\$2.00**

**Human Foods and Their Nutritive Value**—Harry Snyder.

Presents in concise form the composition and physical properties of foods, and discusses some of the main factors which effect their nutritive value. Prominence is given to those foods that are most extensively used in the dietary, and to some of the physical, chemical and bacteriological changes affecting digestibility and nutritive value which take place during their preparation for the table. **\$2.00**

**Dietetics for High School**—Florence Willard, B. S., Chairman of the Department of Household Science, Washington Irving High School, New York City; and Lucy Gillett, M.A., Director of the Dietetic Bureau, Boston, Mass.

The purpose of this book is to teach in a manner adapted to high school the application of the principles of nutrition to the feeding of the family with a special emphasis on relative values of different foods, economy in buying, and the importance of good food habits. **\$1.48**

**A Textbook of Domestic Science**—M. G. Campbell, Instructor in Home Economics, Jesup W. Scott High School, Toledo, Ohio.

A practical textbook and guide which is equally suitable for use in the school library or in the home kitchen. Food classification, the hygienic and dietary value of various food, the chemistry of foods and of food preparation, are treated adequately and with careful correlation. **\$1.40**

**A Laboratory Manual of Foods and Cookery**—E. B. Matteson, Instructor in Home Economics in George Peabody College for Teachers, and Ethel M. Newlands, Director of Home Economics in Buffalo Technical High School.

A textbook that approaches the study of cookery through experimental work upon the chemical, physical, bacteriological and biological properties of foods. A soundly scientific and thoroughly practical book and one that will serve either as a text for an independent course in cookery or as a laboratory manual for the general course in foods. **\$2.00**

**The Common Sense of the Milk Question**—John Spargo.

Deals specifically with the problem of producing and marketing clean milk. **\$2.50**

**The Book of Butter**—S. E. Guthrie, Professor of Dairy Industry in the New York State College of Agriculture, Cornell University.

Contains chapters on the History, Composition and Food Value of Butter; Cleanliness; Care of Milk and Cream; Cream Separation; Grading Milk and Cream, and Neutralizing Acidity; Pasteurization; Cream Ripening, From Churn to Package; Flavors of Butter; Storage of Butter; Marketing; Whey Butter; Renovated and Ladled Butter; Margarine; Definition of Terms; Testing. **\$2.10**

**Nutrition of a Household**—E. T. and L. B. Brewster.

A practical help in selecting agreeable and nutritious foods, without extravagance. Tabulates ordinary food stuffs to show their relative amounts of nutritive value. **\$2.00**

**Food Values**—Practical Tables for use in private practice and public institutions. By Edwin A. Locke, M. D.

Dr. Locke has collected from many sources exact information regarding the composition of all common foods, and has arranged it in such easily referred to style as to be readily applied to regulation of diets. Cooked, rather than raw foods, are used for food values. Actual weighing is unnecessary. **\$2.00**

**Nutrition and Dietetics**—By Winfield S. Hall, M. D.

A complete treatise on the foods essential for the upbuilding of the human body, with special reference to the diet indicated in disease. The foods needed by the body are discussed, classified and their preparation indicated; the use of foods in the body is taken up, as well as infant feeding and diet in health and disease. Valuable tables included. **\$3.00**

**Practical Dietetics**—With Special Reference to Diet in Disease. By W. Gilman Thompson, M. D.

The accepted method of dieting for each condition of disease amenable to dietetic influence will be found in this work. The scientific principles involved in each case are discussed, with brief tables and summaries of dietetic directions appended. Representative hospital and Government institution dietaries are examined; diets according to age, occupation, weight increasing or diminishing, etc., are included. Full index and cross references. Illustrated. **\$8.00**

**The Economy of Food**—By J. Allan Murray.

A popular treatise on nutrition, food and diet, written for students of domestic economy, cooks, dietitians, housekeepers and institution managers. The science of the chemical analysis of proteins and carbohydrates is presented in practical, easily understood fashion. **\$2.00**

**The World's Food Resources**—By J. Russell Smith, recently consulting expert for the War Trade Board, author of "Commercial and Industrial Geography."

"The World's Food Resources" discusses such questions as the future of man's meat supply, the means of increasing grain crops, the development of great untouched regions and the cultivation of new plants to yield men food, the conditions of successful dairy farming, poultry raising, stock farming, fruit culture, and market gardening. It gives a vivid account of the history and distribution of the main sources of food. **\$3.50**

**Home Canning, Drying and Preserving** is a manual of food conservation by A. Louise Andrea, teacher and lecturer on Home Economics, etc. It is clearly written and practical, and any woman can master the art of canning, drying and preserving food without further help. **\$1.50**

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## THE AMERICAN FOOD JOURNAL

25 EAST TWENTY-SIXTH ST., NEW YORK CITY



## Jobbers Oppose Cold Storage Bill

The members of the National Wholesale Grocers' Association have come out strongly against the Haugen cold storage bill and will fight the measure when it comes before the house. Their particular opposition centers on the requirement of showing dates of entry and withdrawal of food products together with names and locations of all cold storage warehouses for goods which are not considered perishable and subject to cold storage regulation. They will ask that the bill be restricted to the usual "fresh" products covered by uniform cold storage legislation.

Under the Haugen bill the term "food" is defined to mean in addition to the usual so-called "fresh products" regulated in the cold storage laws of a number of States, cooked, prepared or cured meat, poultry, game, fish, fish products, shellfish, oysters and clams; lard, lard substitutes, butter substitutes, cheese, oils for food purposes and milk, whether evaporated, dried, condensed or powdered.

After thirty days' storage in a cold storage warehouse the foods enumerated above, in addition to the other foods governed by the bill, would be required to be marked (a) with the words "Cold Storage"; (b) with all the dates when put in and taken out of cold storage, and (c) with the names and locations of all the cold storage warehouses in which stored.

Under the bill's provision against hoarding it would be unlawful to ship in interstate commerce, deliver for shipment or sell an article of food which had been in cold storage for a period exceeding twelve months. The Secretary of Agriculture would be empowered to extend this period to eighteen months in the case of frozen and dried eggs. Cheese held for the purpose of ripening and improving its quality is exempted. It would also be unlawful wilfully to destroy, waste, permit preventable deterioration of, or withhold from the market by possession or under a contract or arrangement, any article of food covered by the bill, with the object of restraining commerce therein.

The bill provides for a certificate of standardization. The Secretary of Agriculture would have authority to investigate the handling, grading, storage and transportation, and as soon as practicable, to fix and establish standards of quality and condition for the following foodstuffs: Poultry, fish and oysters when fresh or frozen; eggs or portions thereof when in shell, dried or frozen; butter, oleomargarin, butter substitutes, cheese and other perishable farm products. After the promulgation of such standards, the Secretary of Agriculture would have authority on application therefor to make inspection of such products for the purpose of determining the standard for such foodstuff.

## New American Sugar Campaign

The "Save the Fruit" advertising campaign for this year, carried on by the American Sugar Refining Company, includes particular attention to the ripening of the various fruits throughout the country so that concurrent and timely posters may be issued. In advising the preservation of fruit, pictures of the particular fruit which is ripe in

the district covered by the advertisement is used to drive home the point.

An elaborate schedule had to be worked out to foretell the advent of each fruit in each district throughout the country. In working out this schedule The American Sugar Refining Company did a thing which other manufacturers might well think about. The Government had no exact chart showing when the various fruits ripen in each county and State in the United States. When the company asked itself whether there were enough apples in Missouri, for example, to advertise apple-butter time, there was no exact and definite way it could tell, nor was there any way of telling the exact moment when fruits were ripe in every part of the United States. So the company evolved its own method of handling this problem. There were no exact data on the subject, so it went out to make its own. The maps for the advertising schedule which have been worked out, thus solve two questions. On each page of the map of the United States the whole country is laid out in terms of strawberries, let us say. The total production in quarts for each State is noted on the map by a color scheme. A yield of five to ten per cent of the total crop for the entire country is shown in one color, one to five per cent in another and less than one per cent in still another. A separate chart then tells at exactly what time currants are ripe in Wisconsin or figs in Mississippi. Through these two charts—and it took a great deal of time and effort to work them out—the company knows exactly where and when to run its advertising copy, and what kind of copy to run for that particular locality.

## Trade Improving, Say Packers

Return to normal conditions and definite signs of betterment may be observed in the packing industries, according to published statements of Swift & Company and Armour & Company.

In a letter to the bankers handling the company's financing, L. F. Swift, president of Swift & Company, says: "While the last year has been a trying time in our business, as in many others, I feel that the industry is now in a satisfactory condition and have thorough confidence for the future. We are operating on a profitable basis, and we now have an actual stable market for our products, including hides and wool."

A review of general conditions published by Armour & Company, says in part:

"For many months the packing industry has had its hopes for business improved pinned on the revival of export trade. This month has brought what seems to be positive assurance of revival in that particular field of the meat packing industry.

"From week to week orders for export account have grown in volume, with a corresponding increase in the extent of inquiries and orders for future transactions. Necessarily as foreign business increases the slack in domestic trade will be taken up and a much heavier tone will underlie the packing industry which, naturally, must be reflected with more or less promptness upon other industries."

## Throws New Light on Vitamines

Some interesting contributions to the facts and literature of vitamins were made recently by Professor F. E. Place, Lecturer of the Agricultural College, Roseworthy, Australia. In an address to the Australian Society for the Advancement of Science, published in the Journal of Agriculture of South Australia, he proved that deficiency diseases in live stock are largely preventable and curable by addition of milk to the animal rations. Among other things he says:

"Stinting milk during early life results in increased susceptibility to diet deficiency diseases later on.

"Fat soluble vitamins removed by separating may be replaced with satisfactory effect by cod liver oil to some extent, but that vegetable oils, such as linseed, are not by any means so satisfactory.

"The collapse or breakdown of diet deficiency disease may be met by large doses of milk, the action being rapid even when the animal appears to be moribund.

"White eye or opacity of the cornea in calves and young sheep is a leading symptom of vitamin deficiency, and disappears after the administration of fat and water soluble vitamins, in milk to calves in fresh pasture to sheep.

"Many obscure forms of nervous disease in livestock would never occur if a full supply of vitamins could be maintained, and the simplest way for the stockowner to do so is to be liberal with milk during the growing period.

"Bacterial invasions may to a large extent be averted if vitamins exist in required quantities and of the right quality in diet. The administration of milk, especially during the growing period, is a simple and effective way of insuring this."

## King's Food Products Company to Have Minneapolis Branch

The King's Food Products Company, which dehydrates fruits and vegetables at two large Pacific Coast plants and also makes small fruit preserves, will establish an office with large warehouse facilities in Minneapolis, according to an announcement made by the president, Earl A. Clark, at a convention of the field sales force. R. L. Thompson, of Portland, Ore., the home of the company, will be in charge of the Twin City offices and cover the territory from the Rocky Mountains to the Mississippi River.

## Northwest Apple Growers Meet

The Western Fruit Marketing Conference held its first meeting in Portland, Ore., in the latter part of July, to plan methods of broadening the market for Pacific Northwest apples, particularly through advertising.

A committee to effect the new policy was appointed, consisting of J. A. Warman, manager of the Skookum Packers' Association of Yakima; Dwight L. Woodruff, manager of the Wenatchee District Co-operative Association; Professor C. I. Lewis, assistant manager of the Oregon Growers' Co-operative Association; C. H. Swigert, manager of the Yakima Fruit Growers' Association, and A. W. Stone.



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Can you think of anything that will replace paper in its numerous, daily uses, the world over? From the cradle to the grave, every mother's son of us uses paper.

KVP Parchment is Paper, chemically treated to make it water, air and germ proof—best adapted for wrapping foods. Common paper is loaded with substance folks would not care to eat—therefore KVP Pure Vegetable Parchment—all minerals taken out—a first class substitute for chewing gum.

We would like to tell you more about KVP Parchment—how it will put dignity into your business if you have never used parchment wrappers—how the KVP Brand, plain or printed, will prove its excellence and reliability under the severest tests.

"Do it the KVP Way!" Ask for samples and quotation.



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is the natural result of care in the selection of food.

## "DIXIE" MARGARIN

is made of purest ingredients, under the most sanitary conditions possible. It is rich in life-giving vitamins.

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## Macaroni Factory Superintendent

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and

**PRIDE OF THE FARM**  
**TOMATO CATSUP**

Bridgeton, New Jersey  
and

331 Spring Street, New York, N. Y.



### Indicate Growth of Hawaiian Pineapple Industry

In 1900 there was one pineapple cannery in Hawaii, with an operating capacity of 48,000 cans. In 1920, with plants equipped with modern machinery, the output was approximately 144,000,000 cans. This is the record of growth of the industry outlined in a bulletin published by the National Cannery Association.

The increase in production is indicated by the following figures:

Date	Number of cans packed in Hawaii
1901 .....	48,000
1906 .....	2,000,000
1911 .....	17,520,000
1915 .....	64,070,784
1920 .....	144,000,000

As in other industries improvements have been brought about in pineapple packing. Canneries equipped with modern machinery, expressly for the handling of pineapple, and with a capacity running up to 900,000 cans a day from one cannery alone, work smoothly and efficiently to supply the demand. The four outstanding innovations which have contributed most to the advancement of the cultivation and canning of this fruit in Hawaii, are: The utilization of the iron sulphate spray to offset the lack of iron in the soil, the development of a mechanical coring and peeling machine, the invention of the slicer and, finally, the development of the "eradicator," which recovers the pineapple left on the skin of the fruit after the first rough peeling has been done by machine.

In the packing of pineapple, the fruit is practically never touched by the human hand from the time it is peeled, the rubber gloves of the sorter being the nearest approach to it. As the pineapple canning industry is of recent growth all the factories and equipment are new.

To supply pineapple containers there already are two can making plants in operation in Hawaii. It required about 126,000,000 cans from these plants to take care of the 1920 pack. The pineapple business in Hawaii is second only to the sugar industry. In 1920 Hawaii's pineapple pack sold for \$31,000,000.

Approximately 20,000 people are engaged in the pineapple industry in Hawaii. It is said that the industry occupies about 46,000 acres of land and that the number of people employed in the various operations of the industry range from a minimum of 5,000 in the slack season to a maximum of about 15,000 in the busy season.

### Butter, Cheese and Milk Industries Show Gain

Returns received by the U. S. Census Bureau from 7,857 establishments engaged in manufacturing butter, cheese and condensed milk, for 1919, indicate that although there was a decrease of 125 in the number of the establishments as compared to 1914, when there were 7,982, the total value of the products increased \$708,738,000 or 191.1 per cent from 1914 to 1919.

The production of butter in 1919 amounted to 938,505,382 pounds, valued at \$533,331,000, as compared with 786,013,489 pounds, valued at \$223,179,000 in 1914, representing an increase of 19.4 per cent in quantity and 139 per cent in

value. The production of cheese in 1919 amounted to 475,330,820 pounds, valued at \$137,281,000, and in 1914 to 377,506,109 pounds, valued at \$50,932,000, the increase being 25.9 per cent in quantity and 169.5 per cent in value.

The production of condensed and evaporated milk increased from 884,646,761 pounds, valued at \$59,375,000 in 1914, to 2,096,973,252 pounds, valued at \$293,569,000 in 1919, the increase in quantity and value being 137 per cent and 394.4 per cent, respectively. The manufacture of powdered milk increased from 21,987,911 pounds, valued at \$2,082,000 in 1914, to 106,601,388 pounds, valued at \$17,273,000 in 1919, while for the same period the production of sugar of milk increased from 4,051,320 pounds valued at \$401,000 to 10,401,116 pounds, valued at \$2,633,000.

### Will Complete Pacific Coast Sirup Factory

Work on the new mill and buildings of the California Sorghum Sirup and Products Company, Modesto, Cal., has progressed to such an extent that the cement foundations for unit number 2, as the new mill will be temporarily known, and the water development for that factory have already been completed, and it is expected that in a short time the main mill buildings will be erected and ready for the installation of the huge crusher and rollers that are now in San Francisco shops in the process of building.

The new mill will be the last word in efficient machinery. The mill proper will weigh approximately 100,000 pounds setting on a solid concrete base of twice that weight. Its capacity will be 200 tons per day and the balance of the equipment will be sufficiently large to handle the raw juice from this tonnage. Both open and vacuum evaporation will be used and complete clarification of juice and sirup will be one of the big improvements.

The plant of the California Sorghum Sirup and Products Company will have a capacity of 300,000 gallons per season and expect to be running to full capacity next year.

### Cooperative Program of American Oil Chemists' Society

The American Oil Chemists' Society, organized first in 1908 by the chemists of the vegetable oil and allied industries, as the Society of Cotton Products Analysts, has issued its co-operative analytical program for the season 1921-1922, and competition for the laboratory cup, won for two successive seasons by

D. C. Hulbert, district chemist for the Southern Cotton Oil Company, at Augusta, Ga., with the respective averages of 98.97 and 99.43 percent, will soon be under way, in addition to the competition for certificates issued by the society for efficient laboratory work. Last year, the cup was taken by the Barrow-Agee Laboratories at Memphis, Tenn., with an average of 99.44 percent.

The society has done a great deal of work and research on improving the methods of analyses and has encouraged the writing of original papers to such an extent that it now operates its own official monthly publication in the name of the Chemists' Section of the "Cotton Oil Press."

Committees have been organized for the purpose of carrying on systematic research dealing with various analytical problems that arise, and at present, the following phases are represented: Moisture, free fatty acid, bleach test, fullers earth, damaged seed, seed analysis, ammonia, oil extraction, oil constants, soap stock, refining test, cotton seed oil refining, corn oil refining, copra refining, soya bean oil refining, cake sampling, hull and lint sampling, oil sampling, meal sampling, seed sampling, soap stock and grease sampling.

In announcing the co-operative analytical program for the coming season, the society states that the main object of this collaboration is to provide for a reliable means whereby chemists may discover tendencies on the part of their laboratory organization to deteriorate in the accuracy of the work done and to locate and eradicate the cause.

This season, the work is to be divided into four groups, or classes or samples, i. e., meal, food stuffs or allied material; fertilizer; fat and crude oil. Attention is called to the fact that the samples will not be confined to meal and food-stuffs, but, to afford as wide a range of personal interest as possible, a large variety of materials will be embraced in the samples. These will include such materials as high protein wheat flours, linseed meal, brewers grain, beet pulp, cotton seed meal, peanut meal, soya bean meal, etc.

### Issue "Use More Cheese" Bulletin

The Cornell Reading Course for the Home, connected with the State Extension Service in Home Economics, New York State College of Agriculture, at Cornell University, has issued a pamphlet entitled "Use More Cheese," by Lucille Brewer. Some fifty attractive recipes are given.

### How Wholesale Meat Prices Have Declined

In addition to an average decline in by-product values of more than 70 per cent, meat prices also have decreased heavily. The following table, compiled from figures issued by the Bureau of Labor Statistics, shows the declines on certain standard meats as of March this year, the latest date for which official figures are available.

		% Decrease			
		1913	March, 1919	March, 1920	March, from 1921 Mar.,
		(Avg. for year)	Price	Price	Price 1919
Unit					
Beef, fresh, good native steers.....	lb.	\$ .13	\$ .245	\$ .205	\$ .163 33
Beef, salt, extra mess.....	bbl.	18,923	35.50	17.00	17.00 52
Bacon, short, clear sides.....	lb.	.127	.305	.211	.154 50
Hams, smoked, loose.....	lb.	.166	.338	.316	.273 19
Lard, prime, contract .....	lb.	.11	.28	.21	.122 56
Pork, salt, mess .....	bbl.	22,471	50.125	42.30	30.10 40
Mutton, dressed .....	lb.	.103	.214	.196	.116 46





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## In Spite of the Dull Times

OF ONE thing we are now more convinced than ever:

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Right through these dullest of dull times, right through this hottest of hot summers, THE AMERICAN FOOD JOURNAL has continued to receive a gratifying number of new subscriptions—from food manufacturers, from dietitians, chemists, food control officials and from all those classes who are interested in the practical as well as the scientific phases of food manufacture and distribution.

They tell us how much they appreciate what THE AMERICAN FOOD JOURNAL is giving them each month, a

August 15, 1921

wealth of valuable material, much of it impossible to procure anywhere else. It is filling a vital need.

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1. Food Control Decisions—a digest of the month's food decisions of the courts, Food Control Officials, etc.
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3. Dietetic Problems—discussed by authorities on nutrition
4. Reports of new food legislation, and proposed legislation in the states, affecting the manufacture, storage or distribution of foods.
5. Articles on Packaging, Dehydration, Canning, Refrigeration, Cold Storage—Processes and other approved methods employed in the food field.
6. News items concerning the food field activities which would naturally be of great interest and value to you in your work.
7. Advertisements comprising the timely business announcements of many of the leading manufacturers and distributors of foods and food products.
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# The American Food Journal

The National Magazine of the Food Trades



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Some Essentials of Success in Dehydration

By Seward C. Simons

The Value of Meat in the Diet

By William C. Richardson and Paul Rudnick

Post-Bellum Sugar Situation in Germany

(Special Correspondence)

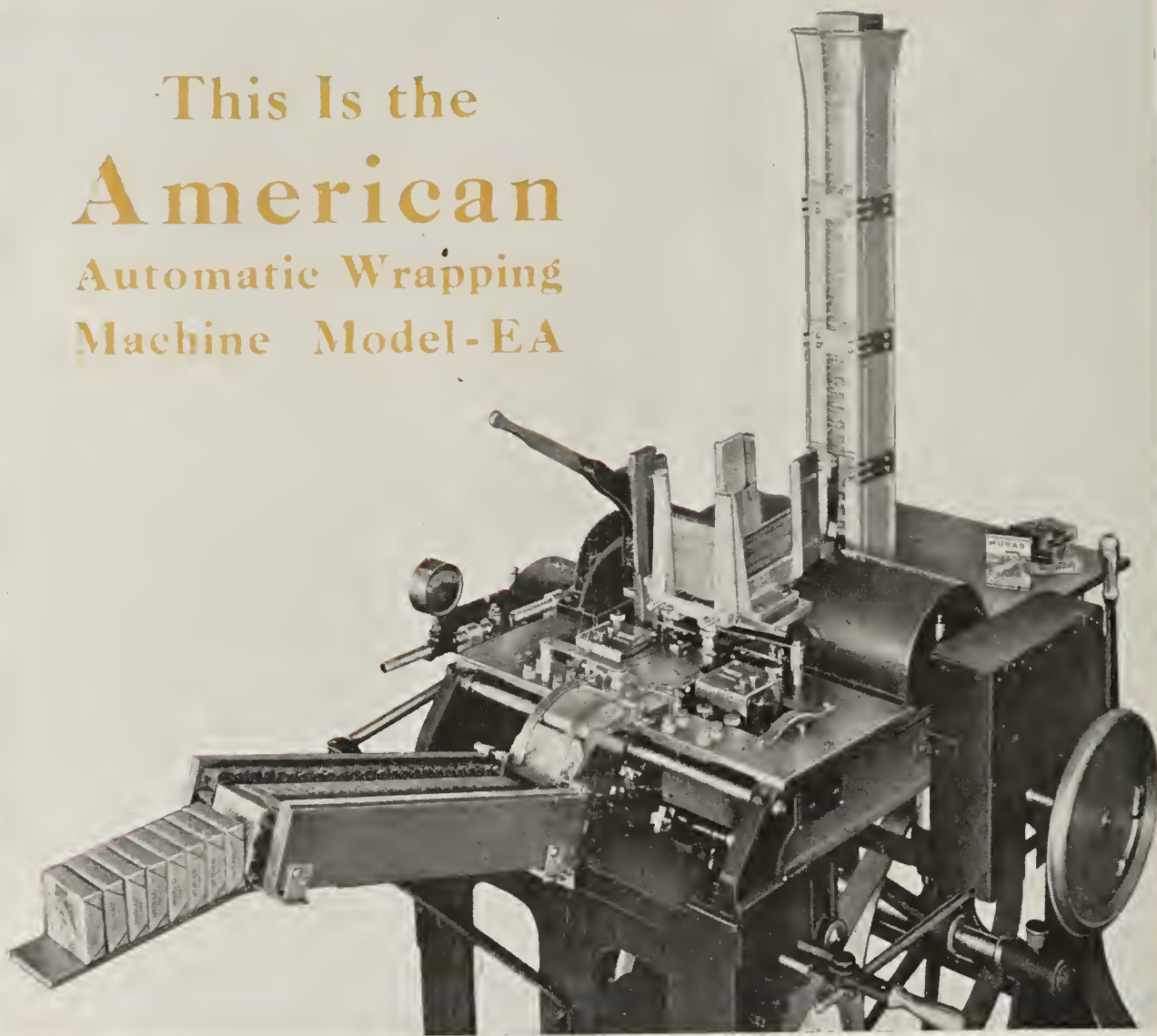
New Definitions and Standards for Foods

Food News From Washington

News of the Food Trades



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Machine Model-EA



## *How Many Packages Per Minute?*

Do you know accurately, as every modern food manufacturer should, just what the daily capacity of each wrapping machine in your plant is, and what this wrapping costs you for each unit of your product?

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As a mark of Priscilla Proving Plant approval, the use of this seal is offered any manufacturer whose product has been tested and passed upon at this home. To over 600,000 women this seal is a sure buying guide because to that number they have been taught its significance in the editorial columns of The Modern Priscilla, their favorite magazine.

There's a big difference between just "tested" and "HOME TESTED." And 600,000 Priscillas\* appreciate the value of this seal.

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\*PRISCILLA (fem. noun) one who delights in her home, good housekeeper.

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# PRACTICAL BOOKS ON FOOD SUBJECTS

Any of the following books may be ordered from THE AMERICAN FOOD JOURNAL:

**Principles of Nutrition**—W. H. Jordan, Director New York Agricultural Experiment Station.

Aims to show the adjustment of reliable facts to a rational system of nutrition without insisting upon adherence to technical details that are not feasible in the ordinary administration of the family dietary. The treatment is practical as well as scientific. **\$2.50**

**The Newer Knowledge of Nutrition**—E. V. McCollum, of the School of Hygiene and Public Health of Johns Hopkins University.

An authoritative new book that demonstrates beyond argument the great value of milk and dairy products in the human dietary, and shows how these are to be employed in promoting growth, health and vigor. **\$2.50**

**Feeding the Family**—M. S. Rose, Ph.D., Assistant Professor in the Department of Nutrition of the Teachers' College, Columbia University.

This is a clear and concise account in simple everyday terms of the ways in which modern knowledge of the science of nutrition may be applied in ordinary life. The food needs of the typical family groups, men, women, infants, children of various ages, are discussed in separate chapters, and many concrete illustrations in the form of food plans and dietaries are included. **\$2.40**

**A Laboratory Handbook of Dietetics**—M. S. Rose, Assistant Professor of Household Arts, Teachers' College, Columbia University.

A series of definite exercises for laboratory work in dietetics, accompanied by problems and explanations of calculations. There is also included a series of reference tables, giving food values for use in laboratory calculations which are in a more convenient form than can be found elsewhere. **\$1.60**

**Chemistry of Food and Nutrition**—H. C. Sherman, Professor of Food Chemistry of Columbia University.

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## THE AMERICAN FOOD JOURNAL

25 EAST TWENTY-SIXTH ST., NEW YORK CITY



# The American Food Journal

The National Magazine of the Food Trades

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## The Editor's Column

We are more and more impressed with the fact that THE AMERICAN FOOD JOURNAL is performing a unique function in the food field. The letters we continue to receive from our readers indicate that we are supplying an important type of news matter and articles that are obtainable in no other way, and we are gratified to feel that with your help the usefulness of THE AMERICAN FOOD JOURNAL is constantly growing.

### Recent Letters from Food Control Officials

Our readers may be interested to hear what some of them have to say.

John A. Israelson, chief of the Dairy and Food Division, State Board of Agriculture, Utah, writes: "**I consider your publication a very necessary article of equipment for this department** and I am sending in a requisition to our Purchasing and Finance Department for your subscription. The Department of Agriculture is a new department just beginning to function and I find in our files several copies of THE AMERICAN FOOD JOURNAL which appears to be **very valuable for the work we have in hand.**"

### "Has Improved Greatly"

A. M. G. Soule, Chief of the Division of Inspection, State Department of Agriculture, Maine, writes: "**I have nothing to offer but praise. I have always regarded the Journal as the best medium for the food official to obtain information concerning food matters throughout the United States.** Under your management it has certainly improved greatly. I can hardly understand how any further improvement could be recommended."

### Doesn't Want to Miss a Copy

D. R. Pruitt, State Food Inspector of the Georgia Department of Agriculture, was considerably concerned because one issue failed to reach him. He sends us an S. O. S. for another and says he doesn't want to miss a single copy.

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# The American Food Journal

The National Magazine of the Food Trades

Vol. XVI

SEPTEMBER, 1921

No. 9

## Some Essential of Success in Dehydration

Physical Removal of Water Has Proved a More Complex Problem Than Generally Realized

BY SEWARD C. SIMONS

President, Anhydrous Food Products Company

UNIVERSITY OF ILLINOIS  
LIBRARY-CHEMISTRY



Battery of radiant energy dryers, one of three similar aisles in plant of Anhydrous Food Products Company, North Chicago, Ill.

N EARLY everyone recognizes dehydration as one of the great industries of the future. It has been called by many with considerable confidence "the next step forward in food distribution." Despite the fact, however, that there are a number of plants which will operate during the present season and that there is a great deal of talk and interest in the subject, it cannot be said that the industry in the sense of any marked change in the customs of the ultimate users, or in the financial return to the owners has yet become firmly established. I think, perhaps, the most

far-reaching reason for this situation is that what appears to be a very simple problem, and is therefore treated without much serious study, is in reality very complex. This statement is true of almost all phases of the subject. The physical removal of the water, for example, seemingly so elemental, has proved, as we shall see later in this paper, in reality a scientific question of considerable difficulty. The manufacturing of large tonnages economically and efficiently is a problem in factory organization calling for experience and the application of keen intelligence. Thirdly,



the merchandising of the dehydrated product calls for special study and investigation. A new type of foodstuffs cannot be thrown indiscriminately on the market without very complete plans to bring about its ultimate consumption or it will remain untouched on the dealer's shelves.

The industry as a whole has generally failed to recognize these three aspects and as a consequence largely failed to co-ordinate these activities. Laboratory scientific work has been carried on with some good results, but in general with an entire disregard for the problem of commercial manufacture. The results of these investigations as published from time to time appear to the practical man full of errors, especially when the laboratory expert includes in his article tables of shrinkage, during time and other similar data. Probably the chief cause of error in this work is that the products collected for laboratory use are almost always first class selected products, very carefully handled with laboratory care, resulting in a shrinkage which is, of course, much less than in the ordinary run which any commercial plant has to handle. There is frequently also the error that small quantities are placed in a large dryer and consequently supplied with great excess of air and heat, which gives them an apparent drying rate and a uniformity out of all proportion to that which can be attained in actual practice, where it is usually found that different trays or levels get very different results.

#### Scientific Principles Disregarded

If these are examples of the errors of the usual technical man, the mistakes of the so-called practical man are no less flagrant. Many dryers have been built with such total disregard for scientific principles that if they did not represent large financial losses they would be ludicrous. The most common error probably has been the supplying to the dryer an amount of air, which based upon the calculation of its absorptive capacity per cubic foot at a given temperature should be equivalent to carrying off the water contained in the products to be dried, while no estimate was made as to the best units required to heat the product or to convert the water into vapor, requiring in practice about four times as much heat more. The result, of course, of taking these heat units from the air is a drop in its temperature, consequent loss of water carrying capacity and complete failure of the dryer.

But if the scientist has forgotten the practical man and the latter has disregarded the ordinary principles of physics, both of them have apparently with great uniformity entirely failed to appreciate the commercial end of their enterprise with regard to the necessity for selling the product after it has been made. Enormous quantities of such products, for example, as potato flour, have been made by dehydration methods at costs which absolutely preclude the possibility of their being sold at a profit to the housewife or commercial users. It should be explained that the reference to potato flour in no way reflects upon the commercial possibilities of the flour industry as carried on by the one or two concerns which have gone into it properly. But most promoters of dehydration companies and those anxious to sell dehydration machinery usually begin by making a great point of the potatoes annually wasted and what could be done with them in potato flour; although to make potato flour by ordinary dehydration methods and without specialized machinery on a very large scale means a cost of at least 15 to 17 cents per pound bulk, which is out of all possible range by the time it is put in the hands of the ultimate consumer. Besides this making of products for which there is no profitable sale, there have been many examples of throwing on the market intrinsically good articles without using the ordinary merchandising experience which could have been derived from the history of many other foodstuffs.

Thus the dehydration industry must combine a knowledge of the technique with that of factory operating problems and of selling, otherwise it is bound to fail, exactly as the meat packing industry, the oil industry or any other modern enterprise in which scientific principles are employed would fail. Just as these businesses, once their ele-

ments are understood and co-ordinated proved of enormous proportions, so dehydration, now that it is beginning to be properly carried on, seems certain to become an equally important success. Let us turn to some of the more detailed questions which the industry has to meet.

#### A Young Science

Despite the almost universal importance of drying in industry, to such a degree that as one looks about the room almost every article can be recognized as dried—paper, wood in the table, rubber in the fountain pen, bricks in the chimney, white lead in the finish of the woodwork, paste in the wallpaper—little truly sound thought has been given to the principles of water removal. Probably this is again chiefly because it seems so easy. As nature dries our clothes for us or the sidewalks after a rain and the plaster in a new house, we recognize no special problem. And yet perhaps in no other technical field are there so many recorded failures as the dryers that won't work. Clearly it is often not so simple as it looks.

Fruit and vegetable dehydration illustrates these statements. There have been thousands of patents, most of them embodying the fantastic ideas of unscientific schemers in the form of complicated dryers. There have been scores of failures financially because of disregard of these simple fundamentals.

#### Scientific Progress

And yet some progress has been made. Twenty-five years ago, when the first consistent attempts were made to put out commercially dehydrated fruits and vegetables, the drying air before being passed over the product was itself dried by contact with calcium chloride or similar means so as to give it greater absorptive capacity. Gradually this was found to result in "more haste and less speed," for the rapid removal of surface moisture caused a hardening of the outside of the product preventing the escape of the inner water, and consequently prolonging the total drying period. Furthermore, when the inner water did receive enough heat to force its way out it caused a violent disruption of the cell walls, which resulted in permanent injury to the structure and prevented the dehydrated product from "coming back" to its original form on the addition of water.

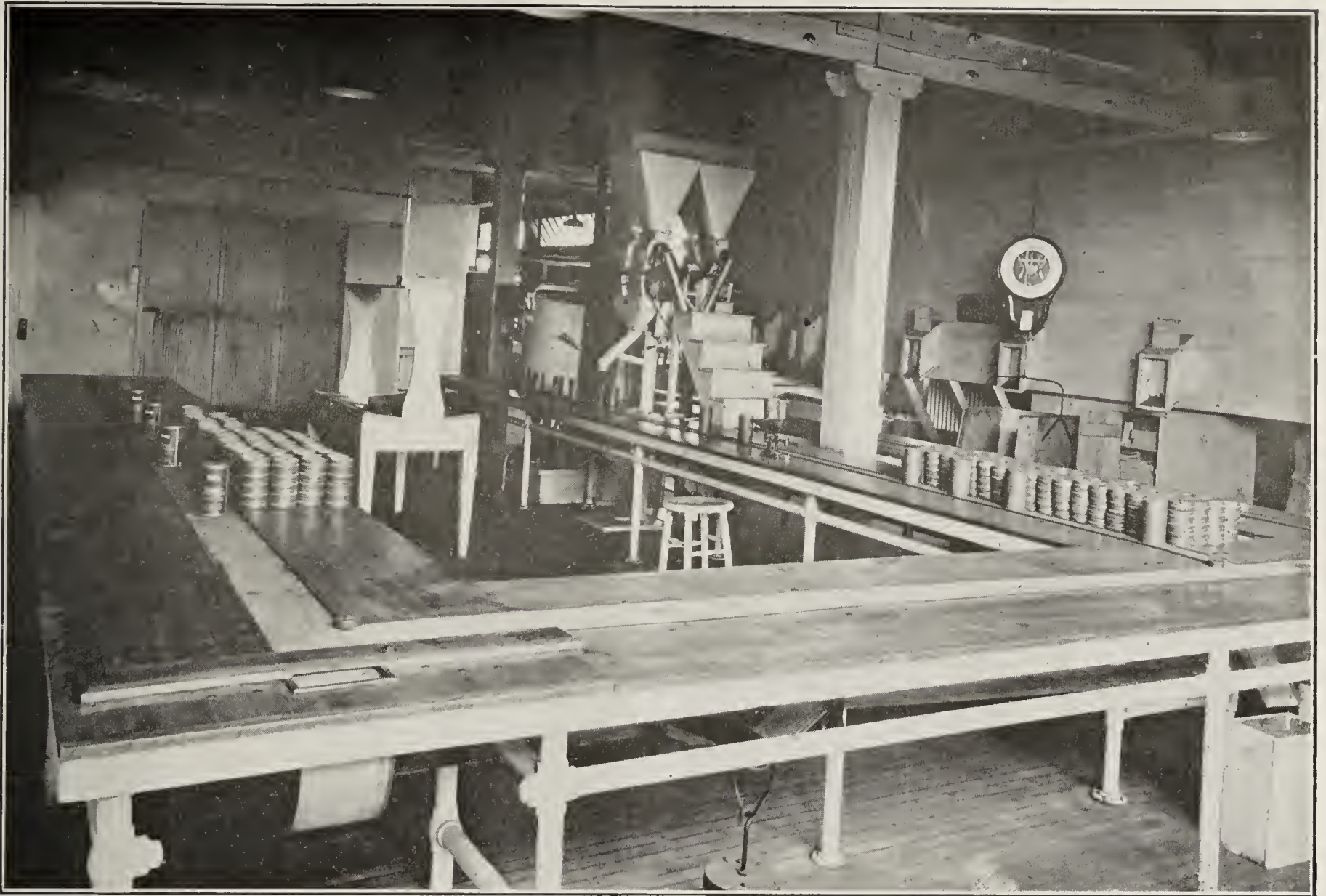
"Case hardening" then became the universal object of attack. To prevent this action, the drying air is given a large percentage of humidity with the intention of retarding the rate of evaporation from the surface of the material, to the point at which it should be no more rapid than the movement of the moisture from the center of the mass. This results in slower drying at first, but because a steady rate is maintained the completion of the operation earlier than where case hardening is allowed. This retarded drying, however, often has a bad effect of a different kind from the "case hardening" on the resultant product—for in such organic materials as decompose, turn rancid or sour readily, the danger of such spoilage is greatly increased, and entirely prevents the use of the method on some materials. It is a case of rapid drying causing case hardening and slow drying spoilage. Obviously, therefore, the whole problem of rapid drying turns on the rate at which the inside moisture is brought to the surface, and anything which can increase this rate, without other harmful results, will make for greater efficiency in the drying system.

This need led to the employment of radiation acting directly on the material to be dried, and giving it increased heat without increasing the temperature of the drying air. As a consequence the rapidity of the moisture flow is greatly increased and the whole drying operation much improved. Perhaps the principles underlying this action should be elaborated for the benefit of those who desire the scientific justification for the results now being obtained by the employment of this "anhydrous" process.

#### Use of Radiant Energy

One form of radiant energy is familiar to us all. On the coldest winter day if we sit in the sunshine inside a room we notice the pleasing warmth on the face of the rays which passed through the zero air and the cold window pane without giving up energy or warming either of them. Most





Packing Room, indicating essentials of sanitary handling and modern factory equipment.  
From the plant of Anhydrous Food Products Company, North Chicago, Ill.

of us know also that such radiation can be reflected in the same way as light and passes through some objects and is absorbed by others exactly as light rays are. Thus a polished mirror will reflect radiant energy and a clear glass will permit its passage just as these same articles are acted on by light. This is natural, for this radiation is merely vibration of the ether at a longer wave length (slower rate) than even the red rays in light. These characteristics explain why it is that we spoke above of the passage of the radiant energy to the products being dried without affecting the air surrounding them. Let these rays, however, strike an opaque object such as the material to be dried and the energy will be converted into heat and be conducted throughout the entire mass.

Of course, the product could have been heated by the surrounding air, but this would involve the using of such high temperatures in the drying air as would hasten the "case hardening" which we above referred to as the continual problem in drying. On the other hand, the action of the radiant energy thus converted into heat in the product is the raising of the vapor pressure of the interior of the product to a higher point than the surface of the product from which the evaporation is taking place, and consequently the hastening of the movement of the moisture from the interior to the surface, which as we above showed was the limiting factor in proper dehydration.

#### Operation Must be Controlled

It will not do, of course, even with the use of radiant energy to permit the evaporation to go on from the surface at the maximum rate. The problem still remains one in which the operation must be controlled by the judicious use of humidity so that the evaporation will be permitted at the maximum rate at which the water is brought to the surface from the interior by the combined action of the difference in vapor pressure and the capillary attractions. Inasmuch, however, as this rate will be very much greater

through the use of the radiant energy than without it, the total drying time will be correspondingly less. The "case hardening" will not have taken place and, therefore, there will be no disruption of the cellular tissue, which being retained unimpaired will readily absorb moisture when again placed in water, and will restore much more quickly and much more perfectly to the original form.

That these conclusions are not merely generalizations from theory may be gathered from the fact that a wide variety of vegetables and fruits have been successfully handled in carload quantities with drying times 30 to 50 per cent less than those usual to the industry, and with a very superior resulting product. Even more striking has been the success in the handling of such delicate products as fresh fish. If high temperatures are used on fish the delicate glues and other constituents are adversely affected and the product assumes a cooked, hard condition. If on the other hand low temperatures are used the drying is so slow that decomposition sets in. Through the use of the radiant energy method, however, fresh cod has been successfully dried in a few hours, which has been soaked back to the original form and cooked without being distinguishable from the fresh fish. Similar results have been obtained from the drying of meat, some of the most remarkable evidences being the fat, which comes through the operation without being carbonized or melted and does not thereafter turn rancid, even under adverse conditions. Some of the large meat companies are already investigating this method in the light of its possible application to their problems.

In the use of radiant energy as outlined above, the fundamental principles of drying relative to proper temperatures and humidities, the recirculation of air to obtain maximum efficiency, the determination of the correct percentage of moisture to leave in the product and a great many other niceties of the art cannot be overlooked without the use of radiant energy; however the operation is like the early



steam engine whose steam valves were hand operated—useful for some things but very limited in value.

### Problems in Factory Operation

Let us turn them to practical factory operation. Needless to say a dehydration plant like any other successful factory must make use of modern ideas in administration, in cost accounting, in mechanical material conveying and similar principles. Neither the promoter of a dehydration enterprise nor a technical dehydration expert, unless he combines some considerable experience in factory management, should be entrusted with the responsibility of the commercial operation of a dehydration plant.

But even where a sound operating policy obtains, one point of importance is frequently overlooked. It should be the object of any dehydration company to prolong its manufacturing season throughout as large a portion of the year as is possible, and thus be able to maintain its working force as nearly intact as circumstances will permit and also to spread its overhead upon a wider base. The writer has been informed that the average operation schedule for all canneries in the Maryland district is less than 300 hours per year. The expense which such a schedule entails will in considerable part explain both the present high cost of canned goods and the financial condition of many canneries today. A dehydration company should attempt to avoid a similar situation. If located in the right district and supplied with proper merchandising support, the factory manager should be able to run his plant very close to five months of the year and possibly even more in some of the favored districts of California or of the South. Every bit of effort spent in devising means to prolong the season profitably will be well worth while.

### Fundamental Sales Principles

Before a manufacturing campaign is commenced the sales program should be definitely in mind and no products manufactured which do not lend themselves readily to sale at a profit. The products to select for dehydration will be those which score highest on the following six points:

1. Dehydration technically successful; that is, if a really satisfactory finished product is possible of production.
2. Fresh season relatively short or limited geographically, so that the dehydrated products will not have to compete constantly with the fresh.
3. Canned products relatively unsatisfactory or expensive.
4. Large and widespread consumption already exists.
5. Products adaptable to bulk users, thus reducing the sales effort necessary to building up a production to carry the general factory expenses, before the retail trade has been thoroughly converted to the new products.
6. Product one intrinsically high priced because only products of this character will permit the expensive handling under dehydration.

Let us try out several products against this rating scale. Tomatoes, for instance, rate well under points 2, 4, 5 and 6, but the dehydration of tomatoes has never been successfully accomplished in such form that the tomato would keep for a long period thereafter, for after about two or three months a very distinct blackening takes place, and under point 3 also it cannot be said that the canned product is a poor one, or that it is expensive consequently, dehydration companies would do well not to adopt tomatoes until at least they have built up their main production on other lines.

Green peas rate, on the other hand, quite well throughout the entire list. Some difficulty has been experienced in making a really tender green pea, but this is certainly possible under the radiant energy system. The fresh product is available a very short season in the year. There exists a very large popular demand for the pea. Hotels, restaurants and other bulk users employ very large quantities and the fresh product in shelled form is worth 10 to 12 cents a pound, making the dehydration cost not out of

proportion to the intrinsic value of the commodity. Green peas, therefore, might well receive more attention from dehydration companies.

The sales department, as we have above suggested, should also proceed with very considerable thoroughness to build up steady repeat markets, and cannot be content with dumping into trade quantities of this new product and expect the ultimate consumer to use it without very thorough education. In the retail trade this means that the dehydration company, which is to be successful, must go in for consumer advertising, demonstration, sampling and the various other methods which experience has shown new food products require. To the bulk user, samples, demonstrations, explicit directions and much careful instruction must be given.

The sales department must clearly emphasize the fact that dehydrated products are not the same as the sun-dried, or even as those kiln-dried or evaporated products which the market has known for some time. The writer was successful in the season of 1920 in merchandising dehydrated apples of a good quality at more than 30 cents a pound, at the same time when the best grade of kiln-dried apples were selling at 12 to 13 cents. This was by the constant emphasis upon the fact that a really new product was being produced. In the same way in handling prunes, for example, an entirely different appeal from the sun-dried prune should be made if the dehydrated article is to be merchandised. Proper dehydration will retain the color of the fresh prune; namely, a dark bluish purple, and leave the product so that when refreshed upon cooking, it will be similar to the stewed fresh fruit. The sun-dried prune, on the other hand, has by the action of the sun been blackened and the sugar somewhat caramelized so that it has a distinctive taste not at all that of the fresh product. Something of the same effect is given by the tunnel dryers of Oregon in operating on the prunes in that district. Here high temperatures and low humidities bring about a product which from a strictly dehydration standpoint is a poor one, although it answers well enough in the ordinary trade. Now if a market were to be sought for dehydrated prunes of a superior quality, no attempt should be made to imitate these sun-dried or tunnel-dried products; but a demand should be created for real dehydrated plums. Otherwise, it would be much better to imitate the prune and allow it to be disposed of in the customary channels along with the sun-dried and without differentiation in price.

Similar reasoning would apply to grapes, for the commercially known raisin is in effect very different from the original grape and has a peculiar taste due to this same caramelization—a taste which the dehydrated product does not properly have.

### Summary

I trust that this analysis of these various aspects of the dehydration problem has shown that my original statement, that it was not as easy as it looks, was well founded. Let no one be lured into the industry by the thought either that the market exists without serious effort, that the factory management is without the usual pitfalls, or that technical details are unimportant. With hard work, however, backed by scientific skill and practical experience, the problem will yield.

And the immense advantage which dehydrated foods possess commercially and from test of taste, the far reaching importance of food preservation and the conservation of wastes now so usual in farm and orchard products and the all but universal interest already awakened in the subject, indicate that the ultimate extension of the industry will include a scope besides which the annual volumes of millions of dollars now done by the now struggling canners of evaporated milk and of fruits and vegetables will seem insignificant.



# The Value of Meat in the Diet

## Members of the Committee on Nutrition of Institute of American Meat Packers Answer Attacks

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**EDITOR'S NOTE.**—One of the interesting contributions to the program of the recent convention of the Institute of American Meat Packers in Chicago was a series of three addresses by members of the Institute's committee on nutrition discussing the value of meat in the diet. One of these addresses, that by Dr. W. H. Lipman of Swift & Company, was published in the August issue of *The American Food Journal*; the other two addresses, one by W. D. Richardson, chief chemist of Swift & Company, and the other by Paul Rudnick of Armour & Company, appear in this issue. There also follows an analogous address by Everett C. Brown, president of National Live Stock Exchange, on "Meat Consumption as a Factor in Live Stock Production."

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### An Answer to Attacks on Meat

By William D. Richardson

Chairman Committee on Nutrition, Institute of American Meat Packers

THE spirit of perversity which sometimes holds sway over human affairs has attempted during the last generation to distort our ideas as to what foods we ought to eat. It seems that almost every food of mediocre quality and little worth has been extolled to the skies and lauded and recommended in advertisement and tract until one is led to believe that such food constitutes the long-sought panacea for all human nutritional ills. At the same time comparatively little has been said and comparatively little work has been done on more essential and valuable foods. Indeed, really important and indispensable foods have either received no favorable mention or have actually been put on the defensive. This is particularly true of meat which has always occupied the central place in the diet, and to a less extent also of fruits which next to meat occupy a position of great importance.

Instead of giving meat the prominence which it deserves, dieticians, physicians, domestic science experts and chemists have, on the one hand, passed it by as though it were a matter of no importance and, on the other hand, criticized the consumption of it as though it were a harmful thing in the diet. Meat has been accused of causing a number of human ills and ordinary dietary disturbances and has been at best treated as a suspicious character or an outcast. With a few notable exceptions every issue of the journals devoted to domestic science and home economics contains articles adverse to meat. Nearly every recent volume published on the subject of dietetics or vitamins, foods or cookery either has nothing to say favorable to meat in the diet or contains belittling criticism and disparaging insinuations. The daily press contains a goodly number of such paragraphs and articles.

#### Man's Craving for Meat

But it has been ordained by nature that man is spared the consequences of his rash and half developed ideas. His actions are even wiser than his intellect, his instincts more intelligent than his reason, and so in spite of the adverse propaganda against meat products, in response to the inward craving for this most satisfying of all foods, in spite of doctrinaires and their teachings, he has always and everywhere, with a few minor exceptions, insisted on making meat the chief item in his daily menu. He has an instinctive craving for meat and like all primary instincts this one has deep significance. Furthermore, his experience teaches him that on a liberal diet of meat he can accomplish his day's work easier and with less fatigue than without it.

In fact of constant attacks on the packing business as a business and on meat as an important dietary factor, the meat industry has been saved from a great decline by one thing only, the instinct and taste of the race in dietary matters. Were it not for this fact the attacks made by the

cereal and dairy interests, by dietary radicals, fanatics and faddists and by the medical profession, would have resulted before now in greatly curtailed consumption, sales and production of meat products. That the campaign against meat has had some effect is certain. That it will have more effect in the future unless it is promptly checked you may be sure. The old attitude of indifference, laissez faire and don't care must be abandoned and in its place must come an attitude of alertness, conviction and interest in our product even to the point of aggressiveness until the baseless attacks so long continued are abandoned. Unless active efforts are made by this industry to place before the public the truth concerning the importance of meat in the diet, which has all too long been taken for granted, it is absolutely certain that the meat industry will suffer a steady decline and that coincident with this the energy, the vitality and the virility of our people will not be maintained.

#### Committee on Nutrition

It is greatly to the credit of the Institute of American Meat Packers that among its first labors was the selection of a committee on nutrition to establish the scientific facts concerning the place and value of meat in the diet, to correct misleading statements, articles and advertisements appearing in the daily press, the magazines and in public places, and to start a campaign of constructive education in order to inform the public of the facts concerning meat.

This committee as now organized consists of nine members selected from the technical and scientific personnel of the industry and including physicians, chemists, dieticians and animal husbandry and domestic science experts. The detail work of the committee is managed by three sub-committees known as the sub-committees on research, on corrective education and constructive education. The function of the first of these is to furnish from the literature covering the many researches now in progress or from original experiments the basic data required by the other sub-committees, by this Institute and its members and the general public concerning the firmly established facts of dietetics with particular reference to our products. The second committee has for its aim the correction of misleading statements, articles and advertisements by means of writing letters to editors, authors and publicists calling their attention to inaccurate, unscientific or misleading statements which appear in public print. The third committee has for its purpose the writing and compiling of new material in the form of placards, brochures, magazine and newspaper articles relating to the scientific and practical facts of dietetics with reference to meat.

#### The Position of Meat Packers

It is perhaps not astonishing that commercial interests having for their principal product a relatively unimportant



article of food should have joined in attacks on that which is to be considered the most important of all, if any single article of a varied diet is to be marked for distinction in this way, but it is astonishing to the point of unbelief that these attacks directed by self-interest should have been taken seriously by the general public and even by some physicians and dietitians. Meanwhile we have remained silent as though conscious of the strength of our position.

That position as I see it and the platform on which we should stand before the public presents itself to my mind somewhat as follows:

1. When we sell meat we are selling a natural food containing the highest form of protein for human consumption, in the most palatable, stimulating and digestible form.
2. At the same time we are selling fats of the highest type along with the protein and other meat constituents.
3. We are also selling vitamins in sufficient quantity for nutritional requirements, particularly if a moderate proportion of fat and the internal organs such as liver, kidney, sweetbreads and heart are consumed from time to time in place of the ordinary steak, roast or chop.
4. Meat is by far the most important single item in the diet, which fact has been recognized by mankind generally from time immemorial. His daily menu has been built around meat as the central object.
5. Vitamins have their primary source in the vegetable kingdom, in fruits, greens and fresh vegetables. A liberal proportion of such vegetable products along with meat will furnish an ample supply of these accessories for growth, development and protection against disease.
6. We are purveyors of high-grade animal fats and we recommend these as energy foods. We regard proteins and calories still as the two fundamentals in dietetics. Carbohydrates such as the starches found in cereals are also valuable as energy foods and should be consumed in fair proportion for the sake of variety.
7. The vegetable proteins are generally inferior to meat proteins and cannot be considered as true substitutes for meat. A few of them found in small proportion in rice, in peanuts, in wheat and in maize are fairly good, but are not truly equivalent to the proteins of meat.
8. We regard milk and dairy products as important articles of food which should be consumed in moderate quantities and along with other foods. However, the proteins of milk in the form of cheese can never be considered a true substitute for meat nor can we look with favor upon the large consumption of milk recommended for the adult by the dairy extremists.

#### Sources of Dietary Information

These are the facts with regard to the adult human diet as I see them, basing my conclusions on what I know from experience and what I have derived from my studies of nutrition. The sources of information are primarily these:

1. The study of natural dietetics of all forms of life and particularly of birds and mammals.
2. The history of dietetics of mankind from the earliest discernible times to the present day.
3. The study of the diets of primitive races and tribes in the recent past.
4. The experience of individuals.
5. Scientific laboratory experiments on animals.
6. Laboratory or group experiments on man.

From all these sources we gain our present knowledge of nutrition. No one of them can be neglected. The man who focuses his attention on laboratory animal experiments, neglecting to take into consideration the broader and more general sources of knowledge on the subject, will certainly be led astray.

The discovery of the function of the vitamins has so excited some of their discoverers as to lead them to place a

special and unwarranted emphasis on the importance of these food accessories even to the denial of protein and calories as the fundamental basis of nutrition. Another misrepresentation which has been made and is even now made by the vitaminists is that milk is the only source or the only suitable source of vitamins. This is far from the truth. They are so generally distributed in natural foodstuffs that it is difficult to prepare a food substance in the laboratory which can be said to be absolutely devoid of one or another of them.

In connection with the undue emphasis which has been placed on vitamins in the excitement consequent on their discovery, we have heard much of the term "safety factor," borrowed from the engineering profession and applied to vitamins in the diet. It has been stated that we require not only a sufficient quantity of vitamins to insure growth and health, but that we must supply the body with more than enough of these vital substances—in other words, provide a sufficient safety factor so that there will be an excess of surplus to draw on just as the engineer provides a safety factor of strength in excess of the actual requirements of any engine or structure.

#### Protein and Vitamins

This is sound doctrine. But in contrast to it some dietitians have been working to show that the average person in the United States consumes too much protein and making the endeavor by experiment and teaching to cut down the usual amount consumed to something like one-third the quantity. If a safety factor is required in the case of vitamins it is certainly required in the case of proteins. The body should be furnished not only with the minimum quantity of high grade protein by which it is possible to keep up bodily repair, but with a considerable excess in order that by no means will any deficiency occur. It is bad logic and poor dietetics to insist on a safety factor for vitamins and neglect the protein safety factor. This is all the more desirable because an excess of meat does not appear to result in harm. In fact meat and its accompanying fat and organs appear to be the only substances which while furnishing a complete diet in themselves produce no ill effects in the human organism. This cannot be said of any other natural food substance, even milk, when used exclusively as an adult food. Meat, however, has these peculiar properties: It is capable of satisfying the human appetite more than other foods when used in moderate quantity and when used even in excessive quantities or exclusively as by the Eskimo, no harm results.

#### Packers to Defend Meat in Diet

In the face of captious and unwarranted criticism we have remained silent until now, fully conscious of the importance of our products in any rational scheme of dietetics. The time for silence has passed and from now on, with the aid and co-operation of the Institute, this nutrition committee expects to take an active part in the dietary discussions now engaging the attention of the American public, not with the view of disparaging other food products but in order to secure full recognition for meat and meat products in the dietary.

Up to this time no voice has been raised in defense or praise of meat. No dietitian, no physician, no chemist, has singled it out for the special emphasis which has been accorded the host of cereal products, the artificial infant milk substitutes, the different sorts and types of bread, cookies and pastries, jams, jellies, pickles, sauces, or the cow's milk so extravagantly over-rated. Heretofore even the industry itself has failed to recommend its own product on broad grounds. A change in this incongruous situation will come with time, but it will not come immediately or soon except through definitely and scientifically planned education.



# The Nutritive Values of Meats

BY PAUL RUDNICK

Member of Committee on Nutrition, Institute of American Meat Packers

**M**EAT is without question the most important single article in the diet of the human being after it is weaned. That this is so has been known to the human race from its earliest times. It is only in comparatively recent times, however, that physiological chemistry has developed the reasons for the important place of meat in the diet. Until these reasons had begun to develop, the preference for meat was doubtless based on its palatability and on the satisfactory results obtained by its use.

Modern chemical research has shown that meat is valuable not only because of its high percentage of protein, but also because its protein has a higher biological value than that derived from any other source.

Proteins are built up of certain organic compounds of nitrogen known as amino-acids. Up to the present time about eighteen to twenty of these have been isolated and studied. The primary source of these amino-acids is the plant. With perhaps one exception, the animal cannot build them up from their elements, nor one from the other. The proteins consumed by the animal are broken up in the digestive tract into their constituent amino-acids and then built up again into the protein required by the animal for its growth and for repairing its tissue waste. For this reason the amino-acids which make up the various proteins are often likened to building blocks. Not all of these blocks are of equal value. Some are indispensable, other are not so essential.

Many of the common proteins in our diet, especially those derived from plants, either lack some of the essential amino-acids or contain too small a proportion of them. It makes no difference how much of such a deficient protein is fed to an animal as part of an otherwise adequate diet, it will sooner or later starve to death unless the missing essential of amino-acids are supplied. The protein of meat contains all of these essential amino-acids in sufficient quantity to make it the most nearly perfect or complete protein for human requirements. The proteins of milk and eggs rank next to meat in value and then follow the various plant proteins such as those of wheat, oats, corn, beans and peas.

## Why Meat is Valuable in Diet

But meat is valuable not only for the quantity and the high quality of its protein; it contains other compounds of nitrogen which are commonly called the extractives. It is these substances to which meat owes its palatability, as well as the fact that it increases the digestibility of vegetable proteins and carbohydrates, such as the protein and starch of beans and peas. These extractives are necessary for the body, for it will form them from its own tissues if they are not supplied in its food. Meat alone can supply these extractives in sufficient quantity, and even various kinds of meat are not equally valuable in this respect. Fish, for example, has less extractives and crab meat more extractives than beef, yet neither fish nor crab meat are of the same value as beef in the human diet.

Meat is also one of the most important sources of our mineral requirements, principally iron, phosphorus and calcium, and to a lesser extent of sulphur and other elements. The four mentioned are indispensable for normal growth and for the maintenance of good health.

Finally meat also furnishes all three of the much talked of vitamins or accessory factors which are necessary for the promotion of growth in the child and for the maintenance of health in both child and adult. The organs of the

body, such as the liver, kidneys and heart, are especially valuable in this respect.

In this connection the animal fats are also of greater value than vegetable oils. Beef fat, and in particular oleo oil, is a good source of fat soluble A, the growth-promoting factor.

In view of the fact that meat tends to be the most expensive article of the ordinary human diet, much attention has been given to the question of the minimum protein requirements of the body necessary for its maintenance. While the body can get along for a time on a certain minimum proportion of protein or of meat, experience indicates that the body so maintained drifts into a state of unstable equilibrium and loses its powers of resistance to disease and to unfavorable conditions. To maintain the body in good health, comfort and ability to do efficient work requires good food and plenty of it, and this means an adequate supply of meat in the diet. This fact is well recognized in the army, together with the fact that the quick delivery of energy requires a high protein diet and that meat is after all the most economical source of protein because it furnishes the most valuable repair material for muscular tissue waste.

## Nutritive Value of Various Cuts

Of the greatest importance in this connection are the results of those investigations in which the different cuts of meat are compared. It was found that the nutritive value of the less choice cuts of meat is fully equal to that of the choicest cuts. The only advantage which the latter have is that they are more palatable, more tender and in general more attractive and pleasing.

Perhaps one of the most interesting of the newest developments of investigational work on meat is the gradual but certain breaking down of prejudices established in the minds of the medical profession against the use of meat by people afflicted with certain diseases. Erroneous impressions of this sort are copied from textbook to textbook until someone happens to investigate some particular instance more carefully. Such groundless prejudice against the use of meat is doubtless due to the same impulse which leads the average individual to blame whatever meat he may have eaten in his last meal for any digestive troubles. The old ideas concerning so-called "ptomaine poisoning" have been shown to be entirely erroneous, especially the widespread belief that such troubles could be ascribed only to meat. Today we know that improper sterilization can cause trouble in vegetables and fruits as readily as in meat.

Thus we may hastily summarize some of the more striking results of investigations which show the great value of meat in our diet. These results, however, are not generally available since most of them have been published in scientific journals or other publications with a limited circulation. Little, if anything, has been done by the meat packing industry to make this information available to the general consuming public. One of the important tasks of this committee is to bring together the results of the work which has been done and make them available to the Institute of American Meat Packers for the information of the consuming public.

## Research Work Will Increase

The widespread and general interest in the vitamin theory and the nutrition problems developed by the European war have brought about a great amount of research work which will undoubtedly increase in volume as funds



again become available. This work is being carried on in universities, research institutions, and governmental departments and laboratories all over the civilized world, and an equally important task of your committee is to keep in touch not only with the results when published, but also wherever possible with the men who are planning and directing these investigations, so that developments of interest to the meat industry may become available at the earliest possible moment. It is of the greatest interest to observe how intimately the progress of the vitamine theory is bound up with the further development of the importance of protein and therefore of meat in our diet.

Like any other truth, the facts about the value of meat cannot be permanently suppressed, but persistent effort may misinform and misdirect public opinion temporarily. Nutritional disorders in human beings, due to partial deficiencies in the diet, are notoriously slow, insidious and often difficult of recognition, so that it often takes a long time before the real cause of the trouble is definitely located. Before the pendulum swings back, as it eventually must, much harm may be done, not merely to the meat industry, but to the health and general wellbeing of the consuming public, if it is induced to consume more of the less valuable and less meat than is required for a well balanced diet.

## Meat Consumption as a Factor in Live Stock Production

BY EVERETT C. BROWN

President, National Live Stock Exchange

SINCE the days of Sinclair and "The Jungle," the live stock and meat industry has been subjected to attacks and vilification in almost every conceivable form. Writers and near writers have vied with each other in endeavoring to startle the world into forgetfulness of meat in its diet. In all our industrial and political history there has never been anything to compare with it, and the wonder is not that their attacks have not succeeded, but that we have survived it all.

Instinct coupled with age-old habits handed down through all the centuries have given us a distinct liking for meat in our diet, and it is this inherent trait that enables this great industry to survive the unfair and bitter attacks against it. Meat eating is natural with us and we need do nothing to create a desire for it. In this respect we have the advantage over all other foods.

Although it has been clearly shown that "there is no substitute for meat," we are greeted at every turn with advertisements extolling the virtues of some food which, in almost every case, is offered as a "substitute" for meat. Obviously meat is the standard which all food manufacturers strive to equal or excel. How far they are from succeeding may be easily learned by giving some of these "substitutes" a trial.

### Meat Consumption Reduced During War

Under the stress of war our Government launched a campaign to reduce the consumption of meat in order that the surplus might be distributed amongst our allies. How well it succeeded may be judged from the fact that many who then abstained for patriotic reasons have discontinued their vegetarian diet in whole or in part. Furthermore, I find that many of the placards put out by the Food Administration at that time are still doing duty. The same zeal was not displayed in recalling these as in their distribution.

### Lack of Government Interest in Meat

There has also been a growing tendency in some of the governmental departments to further the campaigns and propaganda boosting other foods and an apparent lack of interest in meat. Obviously this is a short-sighted policy. Why should the Department of Agriculture spend public money in educating the live stock producers to breed and finish more and better live stock and then do nothing to encourage the consumption of meat from that stock?

The Dairy Division of the United States Department of Agriculture offers to co-operate with any community in a campaign to increase the consumption of milk, but I have yet to learn of a similar effort in behalf of meat. Can it be possible that meat animals are of less importance in our agricultural scheme than the dairy herds? Manifestly not, and I am one who believes that there is a place in our diet for both of these great foods—meat and milk.

The dairy interests have not been inactive in furthering their own interests, neither have they been overly careful about some of the statements sponsored by them. They have frequently been able by one means or another to get

what appeared to be an official approval on much of their material which will not stand the acid test. They have also frequently been able to get the endorsement of men occupying positions supposedly not connected with the dairy industry. How this is accomplished might be interesting information.

### Comparison of Meat and Milk

Where they attempt to compare the relative food value of meat and milk products they are careful to confine the comparison to "energy" value, without showing that such a test ignores other valuable elements to be found in meat products. If meat producers were to indulge in such ludicrous and ridiculous comparisons milk would certainly be shown up to a great disadvantage.

Practically all of the work of encouraging the consumption of meat has, in the past, been left to you gentlemen. Unfortunately for the producers, and perhaps for the industry, your efforts were largely confined to boosting particular brands. I do not make this assertion in a critical way, for I, no doubt, would have done likewise.

The producer has heretofore displayed little or no interest in such matters, contenting himself with raising and marketing more or less live stock according to his own ideas and convenience. No one can deny that this has been a poor policy in the past and we should all strive to bring him to the realization of his interest in every problem affecting the consumption of his products.

### Must Teach Value of Meat in Diet

Although production of live stock has not kept pace with the increase in our population, there is an ample supply of meat available for every man, woman and child in the country. What we must do is to impress upon these potential consumers of meat products the value of meat in their diet.

The component parts of this great industry have, in the past, spent too much time attacking each other and too little time in defending the industry against those who launch their invidious and unfair attacks. I am firmly opposed to a "turn the other cheek" policy in any scheme of things and I certainly feel the time is ripe for us to turn on those who seek our destruction.

The consumer may look askance at a campaign designed to increase the consumption of meat and may feel that ultimate effect will be to increase his meat bill. This need not be the case, however, and I am confident that the proper co-operation of all interests will so stimulate the whole industry that all will be benefitted. Moreover, the consumer stands to pay more for his meats in the future unless steps are taken to bring back normal consumption, which is the real key to profitable normal production.

I, for one, favor taking the consumer into our plans to increase the consumption of meat, and I am confident we can clearly establish our right to ask his co-operation. In the last analysis we depend on his buying power and he will be disposed to use this ungrudgingly when shown the true situation.



# Post-Bellum Sugar Situation in Germany

## Enormous Slump in Production Makes Imports Necessary Though Before War Beet Product Was Exported

BY C. A. HEISE

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THE unprecedented failure of the German beet sugar production during the 1919, 1920 campaign—which almost brought the German sugar industry to disaster—was primarily due to the natural consequences of the war and the revolution, unfavorable weather conditions and last but not least, a wrong sugar policy. While Germany counted 307 sugar factories during the 1918, 1919 campaign, this number had dwindled to 269 plants by 1919, 1920, since 30 factories were permanently lost by the reshaping of the map of Europe by the peace treaty and of the rest six plants had to shut down.

The enormous decline in output is strikingly reflected in the quantities of beets worked during 1919, 1920, viz., 4,960,945 tons as compared with a total of 8,709,010 tons during the 1918, 1919 campaign. Allowing for a certain decline in output by the cession of the territories in which the aforementioned 30 factories are located, the drop in production is none the less considerable and can only be accounted for by a remarkably poor crop. In point of fact, with 7.67 tons yield per acre the 1919, 1920 crop turned out one of the poorest crops on record for decades past, and was more or less due to unfavorable spring weather, frequently strikes and walkouts and delay in spring sowing owing to labor trouble. The latter as well as the retarded growth of plants resulted in a postponement of the harvest, and when frost set in early in October, production was much impeded and the sugar content of the beets still in the ground—about 40 per cent of the total crop—greatly reduced. The obtaining coal famine aggravated the seriousness of the situation.

### Large Slump in Production

The aggregate sugar production during the business year September, 1919—August, 1920, amounted to 717,875 tons as compared with 1,327,714 tons in the previous campaign. The figures for the past years are depicted in the subjoined table:

1917, 1918.....	1,541,100 tons
1916, 1917.....	1,557,900 tons
1915, 1916.....	1,515,300 tons
1914, 1915.....	2,510,000 tons
1913, 1914.....	2,715,900 tons

The extraordinary slump in production, while already strikingly revealed in this statistics, will be more apparent when it is considered that Germany—ranking foremost as a sugar exporting country before the war—actually had to import some 57,000 tons of foreign sugar to cover domestic demands which had already been reduced to a minimum by a strict rationing system. The total inland consumption during the period from September, 1919, to August, 1920, amounted to 931,306 tons in which foreign imported stocks are included. As the total inland production was only 717,875 tons, even the imported foreign stocks would have proved insufficient but for a reserve of 216,000 tons carried over from the last campaign.

In view of the miserable result of the 1919, 1920 campaign, it was clear that measures had to be taken with a view to avoiding a repetition of the disappointment and growers were urged to increase their acreage. Farmers showed little inclination at first, however, to go in for increased cultivation, and for obvious reasons at that. It should be recalled that control of sugar remained in force

after the conclusion of the war with maximum wholesale and retail prices having been fixed by the Government. For certain reasons the Government did not see its way to extend that control to beets. This induced growers to sell the crop to breweries, dehydrating plants, molasses factories, etc., which were ready to pay higher prices than the sugar factories were allowed to under existing regulations. Since the end of sugar control seemed rather far afield, the appeal for increasing the acreage met but with a weak response, farmers fearing that losses may accrue should the Government at any time fix new prices for the sugar factories.

### Sugar Producers Fighting Control

It goes, of course, without saying that producers have been fighting control tooth and nail ever since its inception but the evasive attitude rendered it very difficult to form a clear idea as to what course would eventually be decided upon. As time passed on, however, growers were beginning to have more confidence in a decontrol by the end of 1921 and a questionnaire sent out by the Association of the German Sugar Industry in May showed that the acreage under cultivation had increased by about 23 per cent, as compared with the past year. Nevertheless, all rumors and statements regarding the fate of control were of a rather conflicting nature as the Government declined to outline its policy for the coming campaign. Pressed hard from all sides, the Ministry of Foodstuffs finally announced the maintenance of control for 1921, 1922 in spite of the protests by the industry. As the Government seemed in earnest in their declaration, the industry considered it best policy to discontinue the anti-control drive for the time being and even acquiesced in the maintenance of control for the next campaign while demanding, and receiving, sufficient guarantees that all new prices would be based on a minimum beet price of 20 marks per 50 kilos and that no decontrol was to take place while the campaign was on.

### Decontrol May Take Place After All

Just latterly signs have been multiplying however that decontrol will take place after all before the year is out. The food ministers of the different German states met in conference some weeks ago when the decontrol was principally decided upon by October 1, 1921, and a hint has already been given to the industry to submit suggestions making for smooth winding-up of control. The subject came also up for discussion at a sitting of the German Federal Economic Council (the German national industrial parliament) some time ago when experts were given a hearing and a resolution recommending decontrol by October was carried. It was also recommended to maintain the present embargo on exports and imports in order to protect the industry against losses resulting from the low world's market price for sugar. Those who claim to be in the know aver that decontrol will come about by October but it will probably be some weeks yet till the final solution of this vital problem will be announced.

### Crop Prospects Favorable

Regarding the outlook for this year's crop, prospects are decidedly favorable since weather conditions have been benefiting the plants in a remarkable degree. The view is



held in interested quarters that the available output of this campaign will suffice to cover inland demands within the limits of the present rationing scheme—11.2 pounds per capita per month with special allowances for children and extra rations for jam-making—if not leave a surplus for export. Official figures covering sugar production during the 1920, 1921 campaign are now available for the period September, 1920, to May, 1921, and give the total net production of sugar, expressed in terms of raw sugar, at 1,078,884 tons as against 691,536 tons for the corresponding period of 1919, 1920. The figures showing the quantities of beets worked during that period are 6,568,500 tons and 4,796,248 tons, respectively.

#### Sugar to Figure Prominently

Sugar will probably figure prominently in the new tax program of the Government, seeing that a preliminary bill has been brought in providing for an increase of the present sugar tax of 14 marks per 100 kilos to 50 marks. In this connection it may also be mentioned that the establishment

of a state sugar monopoly for refineries has frequently been discussed in official circles of late. As soon as the first news of the intention of the Government became known, the industry sent up a howl and has been displaying a noteworthy activity in combatting this plan. In the absence of a detailed statement by the Government, there is of course ample scope for speculation, but I learn from a usually well informed source that the idea of a monopoly has already been quietly dropped.

In the foregoing it has been shown that Germany is actively engaged in re-establishing her independence in sugar supply which dates back to 1875, 1876, and there can be little doubt that decontrol will mean an intense stimulus to increasing production. The time may, therefore, not be far off when the weight of German competition will again make itself felt in the international sugar market since by accepting the ultimatum of the Entente, Germany's main problem will be to create export values. Beet sugar is one of them.

#### Rice Will Meet Shortage Caused by Potato Decrease

The prospective shortage of the potato crop makes possible a good demand for the rice crop as a substitute for potatoes. Rice can be made to meet the shortage suggests the Bureau of Markets and Crop Estimates, United States Department of Agriculture. The prospective crop of 33,500,000 bushels of rough rice is equal to 931,000,000 pounds of cleaned rice, and to this must be added comparatively large stocks derived from the extraordinarily large crop of 1920. Cuba, also, which usually receives large imports of rice from this and other countries, has stocks of this cereal that are greater than the ordinary ones.

Consumption of foods was affected variously by the requirements of armies and navies during the war and by the course of prices since the war began, and a per capita consumption of such foods in the near future can perhaps be better estimated, if based on the more steady conditions that preceded the war, than on the erratic ones that followed them. At the per capita consumption of seven pounds of rice in the United States in 1905-1914 for all purposes, before the war, the population, this year, would require 760,000,000 pounds, or 171,000,000 pounds less than this year's crop alone to say nothing of unusual stocks. There are, however, ways of disposing of the surplus besides finding export markets or piling up domestic stocks.

When the potato crop is short, rice is an acceptable substitute food, and one that may naturally be drawn upon partly to counterbalance the potato deficiency. The forecast of the potato crop of this year, made for August 1, is only 316,000,000 bushels, while the consumption, at the per capita rate of 3.8 bushels for 1905-1914, for all purposes, would be 412,500,000 bushels, so that the prospective deficiency, apart from such imports as may be made, is 96,500,000 bushels. The imports of potatoes have never equaled 14,000,000 bushels in one year. Rice may naturally help to fill this void of approximately 100,000,000 bushels of potatoes in the food supply.

It has been noticed, also, that wheat is to some extent a substitute for potatoes in food economy, when their price is high. The expected wheat surplus of this country has dwindled as the season has advanced. The official estimate of production was reduced by more than 50,000,000 bushels of this future surplus wheat during July, and, at the per capita consumption of 6.21 bushels for 1905-1914 for all purposes, the remaining crop, as forecast for August 1, provides an export of 83,000,000 bushels under average food conditions. Part of this may be taken as a substitute for potatoes, if price permits. At any rate, the elements of the situation invite a larger rice and wheat consumption than usual during the crop year 1921-1922, to be determined by relative prices.

#### Right Canning Process Will Keep Cider Sweet

Sweet cider may be canned so as to keep its natural flavor and aroma indefinitely by a method worked out at the hort products laboratory of the Oregon Agricultural College experiment station. The cooked jelly taste is entirely absent.

The apples are collected, sorted to all sound ones, and then cleaned and piled up to sweat, which develops an exquisite aroma in the skins. The sound fruits only are then ground up with a grater. Spoiled fruits spoil the flavor and render the juice watery.

With hydraulic presses an average of three gallons from each bushel of fruit is obtained. The juice is pumped direct from the press into a receiving tank and strained through a coarse cloth or burlap to remove pulp. It is then run through a centrifuge of the type used in clarifying milk.

The juice is then put into the sterilizer, which may be a black tin or copper coil in a tank of water, which is to be held at an even temperature of 160 degrees. Good thermometers and careful watching are essential.

The product next goes into sterilized plain tins which are sealed at once and processed at 160 degrees—no more—for 30 minutes or more. Time is counted after tank thermometer records 160, which must not be exceeded. After a short period of cooling, the cans are ready for market or storage.

If sterilizing the juice causes too much air in it, the cans are run through an exhaust box at 160 for about five minutes.

#### Apple Pectin That May Be Stored to Aid Jelly Making

A method for making an especially rich and concentrated sirup from apple juice for use in jelly making has been developed by the United States Department of Agriculture. This concentrated juice or pectin can be processed and stored for use with fruits which are not in season when apples are abundant.

A comparatively small amount of this sirup can be added to berry or other fruit juice with which it is desirable to use added pectin. The purpose in using it is to make the process of jelly making more certain of success and to increase the yield of high-grade jelly by preventing the long boiling of juices which are more or less deficient in natural pectin. It is particularly useful with such fruit as the strawberry, the flavor of which is most susceptible to injury by cooking. It is useful in cases where for some reason the jelly maker has met with disappointment and finds that she has on hand not a jelly but a rich, well-flavored sirup.

Directions for making apple-pectin sirup are to be had upon application to the Department of Agriculture.



# New Definitions and Standards for Foods

## Status of Cocoa, Chocolate, Oranges, Grapefruit, Tomato Derivatives, etc., Determined

**T**HE Joint Committee representing the Association of American Dairy, Food and Drug Officials, the Association of Official Agricultural Chemists, and the United States Department of Agriculture have completed and issued definitions and standards and in some cases revisions of standards for cocoa and chocolate, oranges and grapefruit, and a number of tomato products.

With regard to cacao products, the text of the proposed definitions and standards is as follows:

Cacao beans, cocoa beans, are the seeds of the cacao tree (*Theobroma cacao* L.).

Cacao nibs, cocoa nibs, cracked cocoa, is the roasted, broken cacao bean freed as far as is practicable from cacao shell or husk.

Chocolate, plain chocolate, bitter chocolate, chocolate liquor, chocolate paste, bitter chocolate coating, is the solid or plastic mass obtained by grinding cacao nibs without the removal of fat or other constituents except the germ, and contains not less than fifty per cent cacao fat and, on the moisture and fat-free basis, not more than eight and five-tenths per cent total ash, not more than four-tenths per cent ash insoluble in hydrochloric acid, not more than five and six-tenths per cent ash insoluble in water, not more than seven per cent crude fiber, not more than four per cent cacao shell.

Sweet chocolate, sweet chocolate coating, is chocolate mixed with sugar (sucrose), with or without the addition of cocoa butter, spices, or other flavoring materials, and contains, on the moisture, sugar and fat-free basis, no higher percentage of total ash, ash insoluble in hydrochloric acid, ash insoluble in water, crude fiber or cacao shell, respectively, than is found in chocolate.

Cocoa, powdered cocoa, is chocolate deprived of a portion of its fat and finely pulverized, and contains not less than twenty per cent cacao fat and, on the moisture and fat-free basis, no higher percentage of total ash, ash insoluble in hydrochloric acid, ash insoluble in water, crude fiber, or cacao shell, respectively, than is found in chocolate.

Sweet cocoa, sweetened cocoa, is cocoa mixed with sugar (sucrose), and contains not more than sixty per cent sugar in the finished product, and, on the moisture, sugar and fat-free basis, no higher percentage of total ash, ash insoluble in hydrochloric acid, ash insoluble in water, crude fiber, or cacao shell, respectively than is found in chocolate.

Milk chocolate, milk cocoa, sweet milk chocolate, or sweet milk cocoa, respectively, is chocolate, cocoa, sweet chocolate, or sweet cocoa, which contains not less than twelve per cent of whole milk solids in the finished product.

The committee is considering, the secretary of the committee adds, the need for fixing a minimum limit for chocolate product in milk chocolate, etc., and will be glad to receive suggestions regarding this point from the trade and other interested parties as well as any other suggestions or criticism pertaining to the proposed revision.

### Grape Fruit Standards

Grape fruit and orange standards are simple, and it is expected, according to the officials, that the definitions will be acted upon by the two associations and the Department of Agriculture in time, if adopted, to become effective prior to the 1921 shipping season. The definitions follow:

Grapefruit, pomelo, is the sound, mature fruit of citrus grandis Osbeck. The juice of the mature fruit contains not less than seven parts of soluble solids to each part of acid calculated as citric acid without water of crystallization.

Orange (common, sweet or round) is the sound, mature fruit of Citrus sinensis Osbeck. The juice of the mature fruit contains not less than eight (8) parts of soluble solids to each part of acid calculated as citric acid without water of crystallization.

A good deal of attention has been paid the great number

of tomato products, and besides the final definitions of strained tomatoes, tomato paste, etc., a number of tentative definitions and standards for tomato pulp and puree have likewise been adopted.

The final definitions and standards for strained tomatoes and tomato paste will be transmitted to the two associations and to the United States Department of Agriculture, to be formally adopted for the guidance of Federal, State and Municipal food officials on or about September 15, according to the secretary of the committee unless valid objections to the standards and definitions as adopted by the committee are received in the meantime. The full text is as follows:

### Final Definitions and Standards for Strained Tomatoes and Tomato Paste

Strained tomatoes is the product obtained by straining sound, ripe tomatoes, raw or cooked, through a screen that removes skins and seeds.

Tomato paste is strained tomatoes concentrated by evaporation, with or without the addition of salt, with or without the addition of basil leaf (*Ocimum basilicum* L.), with or without the addition of pure sodium carbonate or of sodium bicarbonate to neutralize a portion of the acidity, and contains not less than twenty per cent of tomato solids determined by drying in vacuo at 70 degrees C.

Concentrated tomato paste is strained tomatoes concentrated by evaporation, with or without the addition of salt, with or without the addition of basil leaf, with or without the addition of pure sodium carbonate or of sodium bicarbonate to neutralize a portion of the acidity, and contains not less than thirty per cent of tomato solids determined by drying in vacuo at 70 degrees C.

Strained tomatoes from trimming stock is the product obtained by straining sound peelings, trimmings and pieces from ripe tomatoes through a screen that removes skins and seeds.

Tomato paste from trimming stock is strained tomatoes from trimming stock concentrated by evaporation, with or without the addition of salt, with or without the addition of basil leaf, with or without the addition of pure sodium carbonate or of sodium bicarbonate to neutralize a portion of the acidity, and contains not less than twenty per cent of tomato solids determined by drying in vacuo at 70 degrees C.

Concentrated tomato paste from trimming stock is strained tomatoes from trimming stock concentrated by evaporation, with or without the addition of salt, with or without the addition of basil leaf, with or without the addition of pure sodium carbonate or of sodium bicarbonate to neutralize a portion of the acidity, and contains not less than thirty per cent of tomato solids determined by drying in vacuo at 70 degrees C.

### Tentative Definitions and Standards for Tomato Pulp and Puree

Light tomato puree is the product obtained by the evaporation of strained tomatoes, with or without the addition of salt, and contains not less than six and thirty hundredths per cent of tomato solids determined by drying in vacuo at 70 degrees C.

Medium tomato puree, tomato pulp, is the product obtained by the evaporation of strained tomatoes, with or without the addition of salt, and contains not less than eight and thirty-seven hundredths per cent of tomato solids determined by drying in vacuo at 70 degrees C.

Heavy tomato puree is the product obtained by the evaporation of strained tomatoes, with or without the addition of salt, and contains not less than twelve per cent of tomato solids determined by drying in vacuo at 70 degrees Centigrade.

Light tomato puree from trimming stock is the product obtained by the evaporation of strained tomatoes, with or without the addition of salt, and contains not less than six



and thirty hundredths per cent of tomato solids determined by drying in vacuo at 70 degrees C.

Medium tomato puree from trimming stock, tomato pulp from trimming stock, is the product obtained by the evaporation of strained tomatoes from trimming stock, with or without the addition of salt, and contains not less than eight and thirty-seven hundredths per cent of tomato solids determined by drying in vacuo at 70 degrees C.

Heavy tomato puree from trimming stock is the product obtained by the evaporation of strained tomatoes from trimming stock, with or without the addition of salt, and contains not less than twelve per cent of tomato solids determined by drying in vacuo at 70 degrees C.

Communications regarding any of the proposed definitions and standards should be addressed to the Secretary of the Joint Committee, Bureau of Chemistry, U. S. Department of Agriculture, Washington, D. C.

#### To Standardize Canned Tomatoes

Tentative definitions and standards for canned tomatoes and for canned tomato grades have been proposed by the joint committee on definitions and standards, of which the following is a complete text:

Canned tomatoes are the canned vegetables prepared from sound, ripe, fresh tomatoes (the fruits of *Lycopersicon esculentum* Mill.) of any red variety or varieties, by thorough washing and scalding and by proper peeling, coring, and trimming, with or without grading, with or without the addition of sugar and salt, and sterilized by heat. The liquor used for filling the spaces between the fruits is the pure juice derived from the tomatoes so prepared or from others of the same quality and preparation, and does not exceed in quantity that originally present in the prepared fruit contained in the can.

Fancy tomatoes are canned select tomatoes of uniform red color, free from pieces of skin or core, and are whole tomatoes, with or without almost whole tomatoes, and with or without a few large pieces.

Extra standard tomatoes are canned tomatoes practically free from under-colored parts, from pieces of skin or core, and most of them whole or in large pieces.

Standard tomatoes are canned tomatoes reasonably free from under-colored parts, and from pieces of skin or core.

Sub-standard tomatoes conform to the definition for "canned tomatoes," but lack in some respects the qualifications of the higher grades.

Communications regarding amendments to the proposed definitions and grades should reach the secretary of the joint committee on definitions and standards not later than October 1, 1921, and be addressed care Bureau of Chemistry, United States Department of Agriculture, Washington, D. C.

#### What's In the Catsup and Chili?

Tentative definitions and standards for catsup and chili sauce were completed in part at a recent meeting of the joint committee. Criticism of the proposed definitions in so far as agreed upon, and suggestions regarding certain other points are invited from all interested persons. The text of the definitions and standards for tomato catsup and chili sauce follows:

Ketchup, catsup, catschup, is the clean, sound product made from properly prepared strained tomatoes with spices, salts, sugar, and a vinegar, with or without onions and garlic, and contains not less than twelve per cent of tomato solids.

Chili Sauce is the clean, sound, cooked product made from chopped, peeled, ripe tomatoes, chopped peppers, salt, sugar, spices, and a vinegar, with or without onions and garlic, and contains not less than — per cent of tomato solids.

The secretary of the joint committee invites suggestions as to a satisfactory specification for the minimum content of tomato solids in chili sauce, and regarding the propriety of the use of paprika as a flavor and of the limitation of its use if permitted. The committee is also considering the desirability of permitting the use of spice oils and extracts in place of spices.

Suggestions on these and other points should reach the committee not later than October 1.

#### What Is Canned Corn?

Tentative definitions and standards for canned corn, canned sweet corn, canned sweet corn styles, and canned

sweet corn grades were adopted by the joint committee on definitions and standards. Suggestions and criticisms from the trade and other interested persons will receive careful consideration before final definitions and standards are adopted. The text of these definitions and standards for canned sweet corn as adopted by the joint committee is as follows:

Canned sweet corn, canned corn, is the canned vegetable prepared from the grain of sweet corn (*Zea mays* L.) of the proper degree of maturity, with or without the addition of sugar and salt, and with the addition of potable water sufficient to secure the consistency proper for the product.

Cream canned corn is canned sweet corn prepared from corn removed from the cob by cutting through the grain and subsequent scraping. It has a creamy consistency.

Whole grain canned corn is canned sweet corn prepared from corn removed from the cob by cutting in such manner as to leave the grain substantially entire.

Fancy canned sweet corn is the product prepared from young tender corn, of superior flavor, and of such degree of maturity that the kernels are milky or creamy.

Extra standard canned sweet corn is the product prepared from corn, of good flavor, intermediate in tenderness between those used for fancy and standard grades respectively.

Standard canned sweet corn is the product prepared from reasonably tender corn, of acceptable flavor, the kernels of which have reached but not passed the dough state.

Substandard canned sweet corn is canned sweet corn that fails in some respect to meet the qualifications of standard grade.

Suggestions and criticisms should be in the hands of the secretary of the committee not later than October 1, 1921.

#### Evaporated and Dried Buttermilk Defined

Definitions and standards for evaporated, concentrated, condensed and dried buttermilk have been proposed tentatively. The joint committee is considering a limitation of the amount of salt allowable in these buttermilk products and invites comment on this question from the trade and other interested parties, according to the secretary of the committee. The text of the tentative definitions and standards is as follows:

Evaporated buttermilk, concentrated buttermilk, condensed buttermilk, is the product resulting from the evaporation of a considerable portion of the water from clean, sound buttermilk derived from cream to which no neutralizer has been added, and contains, all tolerances being allowed for, not less than thirty per cent (30 per cent) of total solids.

Dried buttermilk is the product resulting from the removal of water from clean, sound buttermilk, derived from cream to which no neutralizer has been added, and contains, all tolerances being allowed for, not more than five per cent of moisture.

Communications of criticism or comment on the questions raised by the committee or the proposed definitions, or requests for hearings, if addressed to Dr. Julius Hortvet, State Chemist, St. Paul, Minn., in time to reach him on or before October 1, 1921, will receive careful consideration by the Committee before the final definitions and standards are adopted.

#### Standardize Raisin Bread

Tentative definitions and standards for raisin bread, upon which comments and criticism are invited, were adopted by the joint committee. The text of the definition is as follows:

Raisin bread is the product prepared by baking bread dough in which the proportion of sweetening ingredient has been materially increased, and which contains in each pound of the baked product not less than two ounces of sound, clean raisins. The upper surface of the loaf and smaller units is commonly sugar-coated.

Communications regarding the definitions and standards for raisin bread from the trade or other interested parties should be addressed to the Secretary of the Joint Committee on Definitions and Standards, Bureau of Chemistry, Washington, D. C., in time to reach him on or before October 1.



# Chemistry and Its Relation to Margarin

## Standard of Manufacture Which Should be Followed in Its Production. Standard for Oils Is Urged

BY H. P. TREVITHICK\*

Chief Chemist, New York Produce Exchange

IT was in 1869 that the French Government offered a prize to the chemist who would devise the best economical substitute for butter for the use of the armies of Napoleon 3rd.

The prize was won within the next year by Monsieur Mege-Mouries, who followed the most obvious lead and turned toward beef-fat as a probable source of the needed product.

By careful chemical and physical research he discovered that he could take the choice portions of beef fat, such as the caul and ruffle fat and by chilling, graining and pressing the fat obtain a sweet, light-yellow, buttery fat which he called oleomargarine and which is known in this country as oleo oil. By emulsifying this fat with naturally soured skim milk Mege-Mouries produced the first commercial margarin.

Thus we see a chemist as the founder of the oleomargarine industry, and, as the industry has grown, it has been constantly supplied with new raw materials, and the quality of the product has been improved through the effort of the chemist. It was Metchikoff, a Bulgarian chemist and bacteriologist, working in Paris, who isolated the bacillus which causes the souring of milk and thus laid the foundation for the margarin manufacturer's use of pure cultures to obtain a suitable flavor in his product.

The vegetable oil industry in this country is of recent origin, and, of course, the chemist's connection with it has only developed within the last two or three decades.

While I was in the South connected with a crude cotton oil mill, stories were still current of the good old days when there were no chemists to worry the managers and superintendents, the mills left 15 per cent or more oil in their cake and mills made 100 per cent on their capital invested in a year.

### When Seed Was a Waste Product

Before the cotton oil mills started, the seed was a waste product which was not only of no value but was causing serious damage, and its disposal was most troublesome and expensive problem. Gins hired men to remove the seed from the dumps around the plant. If the seed was thrown into the creeks it would coke them, and whether on the land or in the bayous, it would rot and emit a horrible odor. Hence State laws were passed regarding the disposition of the seed, and many lawsuits were caused. In quite frequent cases, the gins, after all the space around them was filled with rotten seed, were moved bodily to another location, it being easier to move the gin than the seed.

An oil miller would go out to a plantation, look at a pile of seed, containing possibly 100 tons or 200 tons, and offer \$150 for the pile. The result was that a mill costing \$30,000 to erect made \$100,000 in a single season.

Now, as a result of the chemist's work in finding new method of using the oil and new methods of pressing and handling, the oil mill makes far more oil per ton, and the price of the seed in normal times is about \$30 a ton. During the war it reached \$80 or more a ton.

Margarin manufacture is a more recent development of the oil industry and is a development which is wholly due to the pioneer work of such chemists as Wesson and others,

in showing how to refine vegetable oils so as to make them suitable for the best grades of margarin. By taking the best grades of oil made, using first the cottonseed, and then gradually turning to the peanut and cocoanut oils, and stiffening them with oleo oil, lard, and lard stearine, fairly good butter was made. Under the leadership of the same chemists, vegetable stearine pressed from cotton oil was substituted for animal fats, and finally hydrogenated cotton, peanut and cocoanut oil were used, giving a pure vegetable compound, the true nut margarin. By churning this product with milk the chemist is able to make a product which compares very favorably with the best dairy butter in flavor and digestability, and which is considered a much cleaner and a more sanitary product.

### Scrupulous Care Required

In manufacturing a margarin the chemist must exercise scrupulous care in inspecting his raw materials. He must see that the oil, whether purchased or refined in the plant, is absolutely sweet, free from fatty acids and in no danger of going rancid. If the oil is refined in the plant the absolute removal of soap from the refined oil must be accomplished before bleaching and deodorizing the product. This point is not watched closely enough in many plants and results in poor oil. An oil with an increased acidity at it leaves the deodorizer probably showed that same or greater increase as it left the bleaching kettle. This fact has been noticed in numerous cases and is apparently due to the breakdown of slight quantities of soap left in the oil after refining, the caustic being removed by the clay and the acids being liberated to damage the oil. As careful treatment of the oil to remove the soapstock before bleaching will remove this difficulty, there can be no question of the fact that the soap is left in the oil, and dissociated in the bleaching kettle, although many refiners blame the increased acidity on the deodorizer.

Of course, on purchased oils the inspecting chemist must be guided by the flavor in detecting improperly finished oils. The oil should be purchased subject to approval of sample, and the sample should be filed with some commercial oil chemist who would see that the delivery equaled the sample. Shippers would also be better protected if samples of their parcels were approved before shipping. In one case, 2,000 barrels of deodorized cocoanut oil were shipped 1,500 miles to New York, and destined to Europe. On inspection at New York, the lot was rejected because of flavor and high acidity. The shipper was compelled to return the material to his plant, wash the oil to remove the excess acids, and then sell it as refined oil, losing the double freight and handling charges in addition to the cost of treating the oil again after emptying the barrels, and his losses due to selling a deodorized oil as a refined oil.

### Effect of Summer Heat

A further difficulty with the shipment of barreled oil seemed to be caused by hot weather in the summer. As you all know, a winter cottonseed oil is an oil which has been chilled below freezing and pressed at a low temperature to remove the stearine. A prime winter oil must be absolutely clear after sanding five hours at a temperature

\*An address delivered at the convention of the Institute of Independent Margarin Manufacturers at Atlantic City, N. J., June 30.



of freezing. After having tested numerous samples of shipments of such oil, both at plants before barreling, and after being in the barrels various periods of time, it was noticed that almost all winter shipments of such oil were unsatisfactory, the failures being due to faulty, careless or indifferent work in the refinery.

However, nearly all the shipments made in summer were unsatisfactory, although the shipments were made by many reputable refiners located in various parts of the country. By testing the oils before barreling, it was proved that they were good winter oils. Further tests showed that the material causing the cloud was moisture and soap. As the oils were barreled when perfectly free from these and the barrels were absolutely dry, it was shown conclusively that the fault was the action of the sun's heat on the barrels, causing a reaction between the slight free fatty acids of the oil and the free caustic of the silicate, with which the barrels were lined. This action seems to occur whether the oil is left exposed on the loading platforms, or yards, to the direct rays of the sun, or whether it is loaded in box cars immediately after barreling. The length of time necessary for the reaction to occur seems to depend, however, on the exposure to the sun's heat. This can happen not only in cotton oil, but can and does happen with cocoanut oil, frequently this accounting in some instances for the presence of soap and moisture in cocoanut oil as received at the margarin plant. The chemists' rejection of such oil will cause the refiners to exercise more care in the silicating of their barrels and filling of same with oil.

As with the oil, the chemist should inspect the milk received by the margarin plant, testing it for acidity, total solids, and fat, and also the sale, determining its purity, solubility and fineness.

Such information, which the chemist can easily furnish, regarding all raw materials purchased or offered for purchase is of the greatest value in determining their desirability or lack thereof, for margarin manufacture.

Let us now turn to the second branch of your chemists' activities, the reduction of manufacturing costs through the control and standardization of plant operations and the elimination of waste.

The compounding of margarin is an operation entirely governed by the laws of chemistry, including inorganic, organic, physiological and physical chemistry, and bacteriology. Consider first the preparation of the milk. Whether you ripen with or without the addition of a pure culture of lactic acid bacteria, you will doubtless determine the proper degree of acidity by a chemical measurement, rather than by the old-fashioned method of taste, which can vary widely with the personality of the taster (and also with what he had for breakfast). Your chemist should also determine for you the best time and temperature of pasteurization and cooling for the results you desire to obtain. Having established these standards he should faithfully require adherence to them in the handling of every batch.

#### Other Factors That Are Essential

Making and cooling the emulsion is a mechanical operation entirely dependent upon well established laws of physical chemistry. For uniformity of results the temperatures of the various ingredients when mixed, the time and speed of agitation, the temperature of the cooling medium, the rate of cooling, the temperature of the cooled material, should all be established by the chemist and adhered to for every batch. If any one does not know all of these in his plant, and the why back of each of them, ask your chemist if he knows them, and if he does not, you can have lots of fun finding out together.

In ripening the goods, the temperature of room, the temperature of the goods, the time of ripening, the acidity before and after ripening, agitation if needed, and the amount are all important. Your chemist should know all of these for each class of goods, and why each figure should be what it is and not something different.

Also in the working, the temperature of the room and of the goods, the percentage of salt for best results, the percentage of moisture and milk solids before and after work-

ing, will be of value in standardizing processes and products.

In these days of enforced economy the question of reducing losses and wastes in factories is a vital one, and here is where the chemist should shine. In melting oil out of barrels do you get it all and nothing else, or are your methods wrong? Have your chemist prove the absence of silicate and soap and insoluble matter by analysis, not by saying, "Well, we got out the marked weight." Do you get the overrun you should with the amount of milk and salt used? Analysis of plant effluents may show an appreciable amount of oils or milk solids or both, going down the sewer. Will the amount possible of recovery by various means pay the interest on the investment necessary? Your chemist can tell you.

If all the above control methods have been enforced and adhered to, your products should be clean, economical, tasteful, healthy, and above all, uniform, but still the chemist should test every lot of finished goods for moisture, milk solids, salt and acidity, just to see whether what ought to be, really is.

#### Importance of Research Work

We are constantly seeing the introduction of new oils and oil products, animal and vegetable, hydrogenated and plain, so that the margarin manufacturers' chemist should devote what time he has for research to experimenting with new combinations as bases for margarin, keeping ever before him the ideal of the nearest possible approach to the physical and chemical characteristics of butter at the lowest cost compatible with quality. Then in "spare" moments, your chemist should chase a few vitamins. He may find them in margarin yet. Some other fellows say they are in some other things. They know they are there, because they can't find them: they claim they are not in margarin, for the same reason, yet how can we know they are not in margarin, until we find some there?

Now, since I have outlined a little work for your chemists, even at the risk that they will all rise up and call me cursed, so I am going to make a plea for you for them. I hardly need to ask you to employ earnest, experienced, honest chemists, but give them tools and apparatus to work with, have confidence in their judgment in chemical and physical matters, a thing which you can do if you have good chemists, try to inspire them with the spirit of accomplishment and the joy of good work well done, and above all remember that the laborer is worthy of his hire, and that to get and keep a good chemist you must give him a chemist's salary.

Don't I beg of you, make the old American manufacturers' mistake of hiring "two young fellers yesterday, one of them the chemist, the other the office boy, and ding me if I can remember which's which."

#### Urges a Code of Standards

The average American oil refiner says all the margarin manufacturers are too technical and the average margarin manufacturer says the oil refiners are all very careless. I am using the mildest terms. Those of us who have worked in both these fields of endeavor know that the object of both is the same, to make product of the finest quality possible. I would respectfully suggest that this institute adopt a code of standards of quality for the various refined vegetable and animal oils purchased by its members and that each member pledge himself to demand adherence to those standards in his purchases. Disputes as to quality could then be referred to disinterested referee chemists under agreement between buyer and seller to abide by their decision.

This is the method used by the Interstate Cottonseed Crushers Association and the New York Produce Exchange, both of which bodies already have standards covering most of the oils purchased by the members of this Institute.

It is the speaker's belief that such a background for your purchases would insure your receiving the best possible quality raw materials for use in your margarins.



# New Packages for Old Products

## Advantage of Attractive Covering for Food Products is Found in More Rapid Turnover

BY D. D. DEMAREST

(Written for The American Food Journal)

THE greatest asset any company can have today is a package that moves steadily and rapidly across the counter. The present conditions in business are driving this idea home to many concerns which never before felt the acute need of quick turnover. The banks have been a prime factor in spreading this teaching, for where formerly any solvent concern could receive accommodation up to its ability to pay, many of them are now finding their line greatly curtailed and have had to turn their attention to means of reducing the working capital which was previously used in getting out their product. They find that the bugbear of frozen capital applies to industry the same as frozen credit applies to banking. No institution can afford to have its funds idle and consequently they must create and encourage activity in every possible way. It is the package that turns itself quickest into cash that will bring its company through with the highest honors.

Every single element that enters into the success of a package demands and deserves the most careful analysis and any element found wanting must be ruthlessly discarded. Quality, advertising and appearance are the three essentials of package merchandising today, and of these under present conditions the appearance of the package offers the greatest field for improvement.

### No Time for Niggardly Curtailment

Advertising must be maintained, and while the present is no time for prodigality neither is it a time for niggardly curtailment. Every medium should be weighed as never before and proven methods followed up with redoubled attention. It would also be suicidal to lower the quality of the product or to ignore any of the other essentials in the complicated machinery of distribution, but in the end the final contact with the buyer is influenced very largely by the appearance of the package itself and sales are made or lost as this appearance is or is not pleasing.

One has only to wander back in memory to the country store of a few years ago and contrast that with the modern city grocer to appreciate the growth that has been made in the number and quality of packaged goods. The preparation of these packages has brought out many ingenious machines for their weighing, cartoning and wrapping that offer the manufacturer aides in improving the appearance and protection of his package that were not before available.

There is much to be said for the simplicity and ruggedness of the old stand-bys but these depend largely on their known excellent qualities and on steady advertising to keep them in demand. The newer articles seem to be prepared with an idea of appealing to the eye as well and may eventually give the older favorites a hard rub.

### New Packages Often Look Better

The newer packages not only often look better from a purely aesthetic standpoint but they are also often made to look as though they afford greater protection to their contents. Very many of these are wrapped in an outside wrapper of glassine or waxed paper. This outer wrapper is not only moisture proof but also keeps the main wrapper of the carton looking clean and neat. A customer wants fresh goods even if it is only a cake of soap and few will buy a dusty fly-specked package if there is a clean bright looking one along side of it on the same shelf.

This added protection and enhanced appearance can be secured at a negligible cost as two girls with proper equipment can wrap up to two hundred gross of packages a day

and the paper itself is a small item. This protection is one of the best possible safeguards against depreciation on the shelves and at the same time is a big help in moving the goods before they could become shopworn anyway. It is another illustration of the fact that preparation for any trouble is a pretty sure means of preventing its occurrence.

With the protection afforded to the covering there is more inducement to make this truly represent the quality of the product within. Every device of the printer's art is open to the manufacturer.

### Use of Waxed Paper or Glassine

Some products such as sliced bacon seem to be packed to best advantage in a box and cover while breakfast foods and many others have utilized the folded carton. In both cases the designer may utilize printing on the cardboard or a paper outer wrapper. If he favors the latter he will find machines that will cover his plain carton with a loose wrapper as used by some biscuit companies or a tightly stretched paper that is glued to all sides of the containing carton. This in itself offers a very considerable amount of protection to the contents and when reinforced by an additional layer of wax paper or glassine the result is almost absolutely impervious.

It has long been recognized that metal foil when properly applied excluded atmospheric changes and retained the original freshness of the product even better than will a purely paper covering. The users of foil have usually employed a paper label to retain the foil in place although many candy makers have found printed tinfoil folded around the article quite satisfactory where there is little handling. One of the large foil companies has recently brought out some effectively original ideas in printed foil and has mounted this foil on waxed paper. The foil and paper is wrapped about the carton and then a hot iron is all that is needed to hold it securely in place. This style of package has been tried and adopted by several bakers for fancy cake. It is reported to have taken so well that one baker had to abandon several other lines until he could secure additional equipment in order to supply the demand for the foil-wrapped cake.

### Different Problem for Each Product

Every product has a different problem, but in each field the race is on to prove who can find the package that most nearly combines the ideals of beauty, strength and economy. In this race the machine builders are neutrals who are willing to furnish the best they have to every comer. As an illustration of an adaptation from an entirely different field that may interest the extract industry, it has been the custom for many medicine houses to prepare their bottles for market by covering with corrugated paper and then wrapping in a printed label. Machines are now being built which will do part or all of this labor. Extract bottles used to be displayed on the shelves without any protection. Now they often use a cardboard carton but it still remains for someone to take an idea from our perfumer friends and bring out a distinctively wrapped bottle that no bride can afford to be without.

The first contact with the customer is established when she sees the outside of your package. Every moment of thought and attention that is given to making this first impression favorable to your product will bring in redoubled returns not only in increased sales but by instilling that vital activity which makes your package a constant repeat seller and keeps it moving where the move counts most—across the counter.



# EDITORIAL

## Prices and Buying Power

IN the early part of the industrial depression that began in 1873, and quite similarly in the case of the depression that began in 1893, the opinion expressed by some very able and intelligent observers was that the country was overdeveloped. Too many factories had been built, too many mines opened and too much railroad mileage constructed. Business was poor because there was not sufficient employment for the facilities.

The idea was not that the employment was deficient, but that the facilities were in excess; just as it might be said of human employment that there were too many men, not that there were too few jobs. In each case the sequel showed that such analysis was wrong. The fault did not lie with the productive facilities, for afterward when activity returned there was much further development, and the greatly increased facilities all found employment eventually.

Little was said in those days about prices being too high. Possibly they were somewhat higher than would have been well, but the decline that followed did not bring about activity. Unemployment had intervened and the buying power was so reduced that men found it impossible to buy freely. The decrease in the total of purchasing power was greater than the decrease in unit prices.

Of late a great deal has been said about commodity prices being too high. No doubt the mental attitude of many buyers was that of assigning the level of prices as a reason for abstention from buying, but it does not follow that this was the main reason. It would be absurd to assume that an economic law can be deduced from what chances to be in men's minds.

Inasmuch as prices needed to come down it was well to have sellers appreciate that buyers were objecting to them. Now, however, we have progressed to another stage. We shall be in error if we adhere blindly to the idea that activity was, is and will be absent through one cause only, that of prices being too high. If a man is guided solely by such philosophy he can have but one view—that as long as inactivity obtains prices are too high, no matter what those prices are.

The buying power is greatly reduced. There is much unemployment and with nearly all those still in employment the wage or salary rate is lower. The earnings of capital, which normally are reinvested, have dwindled greatly and many companies have seen profits turned into losses. For business revival the main point is the building up of buying power, obviously a slow process. An argument frequently made is in substance that capitalists must pull business over the dead center, by seeking investment in construction work. That would distribute some jobs, wages would be paid and the wages could be spent. This would bring about more spending, and so on. The plain difficulty about this is that with the general buying power at a low level capital would not see prospect of an early return on the investment, and therefore would be disposed to wait until the buying power was clearly increasing. That the capitalist does not invest is not conclusive proof that he thinks prices are still too high. He may, for all one knows to the contrary, be satisfied with the prices, but entirely dissatisfied with the immediate prospects for the investment.

## Benefits of Export Trade

APPARENTLY there is a clash between those who hold that to be prosperous the United States needs an export trade, and those who contend that payment for the goods exported would bring us fresh trouble. On the one hand it has been argued that we have an excess of productive capacity, hence must have an "outlet" or be but indifferently employed, while on the other hand it has been urged that a large "favorable balance" in merchandise trade is calculated to produce a price inflation that will kill the business.

The more moderate view in favor of our doing an export business is that thereby our various markets are broadened and correspondingly stabilized. We have the same principle in the domestic market. The seller who distributes his goods widely over the country has a steadier market than the one whose trade is local. When domestic demand for a given commodity is good we can export less, and when the demand falls off we may be able to export more. Obviously that is altogether different from an attempt to export all goods when all demand is light in our own country. We know well enough now that as a rule such a thing cannot be done. When demand in general is poor in the United States it is likely to be poor practically everywhere.

The question has often been asked, what is the relative quantitative importance of our domestic and our export trade. The Federal Reserve Board has given the matter careful consideration and expressed the opinion that, very roughly, a normal export trade may be taken at 10 per cent of the whole. The board (in the August Bulletin) arrives at this by taking 1919, with a census estimate of \$62,589,000,000 for all manufactured products and \$16,613,000,000 for all crops, or a total of \$78,602,000,000 while the exports were \$7,920,000,000. The board points out that export trade has a stabilizing influence upon prices.

Obviously this is a totally different thing from planning definitely to export a certain percentage of each of a large number of products and then endeavoring to maintain that percentage, whether demand is good or bad at home or good or bad in the foreign market. It is distinctly the flexibility that is an advantage, and to endeavor to maintain a fixed percentage would be to renounce that advantage entirely.

Again, we should not seek to prevent importations. Tariffs are for the purpose of raising revenue and taking care of unevenness and divergence in legitimate costs of production here and abroad.

Almost constantly since the armistice questions have been asked relative to the continuance of heavy exports as compared with much lighter imports. The favorable balance in merchandise trade rose to \$635,463,660 in June, 1919, its high record, and then declined to \$65,501,992 in July, 1920; but that was not the end, for the balance rose again to \$454,379,696 in December, 1920, and the figures have given no clear indication of what we ought to expect. The Federal Reserve Board now gives an interesting fact bearing on this question. On the assumption, generally believed to be substantially correct, that there was an even break at the time of the armistice, it was computed that the unfunded balance resulting from our foreign trade amounted to \$3,000,000,000 on July 1, 1920, and that this increased in the next fiscal year by \$1,500,000,000, making about \$4,500,000,000 on July 1, 1921.



# Gaping Inequalities Between Wholesale and Retail Food Prices

IN a bulletin published by the Chemical National Bank of New York is printed an analysis, portions of which are abstracted below, in conjunction with charts which aim to show the vital relations between wholesale and retail prices. Claim is made by the bulletin that its analysis gives definition to a fact of common knowledge, namely that gaping inequalities exist in the present price situation, that relations between different groups of producers have been thrown out of joint because of these price irregularities.

"It is this disturbance of old relations," says the bulletin, "rather than the rise and fall of the general price level which has such a sinister effect on business prosperity, and it is for this reason that the restoration of equilibrium is so greatly to be desired at present."

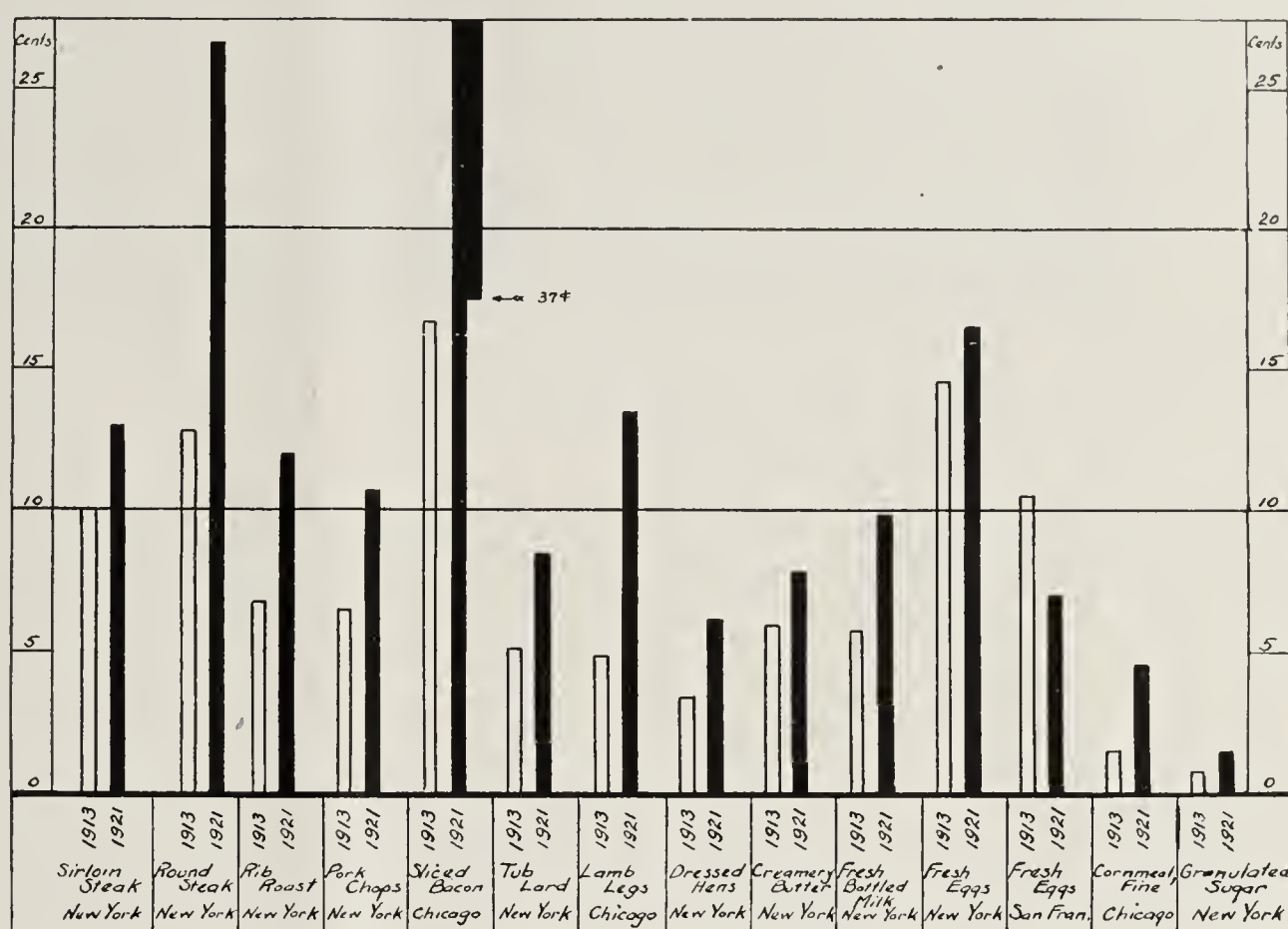
Figures are presented which indicate that wholesale food prices rose to much greater heights than did retail prices during the period of price expansion in 1919 and 1920. Conversely, their fall came earlier and has been more drastic.

Significant comparisons, however, are possible for specific commodities. Chart I, based upon retail prices published in the Monthly Labor Review for June, 1921, shows the extent to which readjustment of wholesale and retail prices has been carried in certain lines.

In interpretation of this chart, the bulletin says:

"The hollow columns represent 1921 wholesale prices in percentages of 1913 prices, and the solid lines measure 1921 prices of related commodities at retail. The

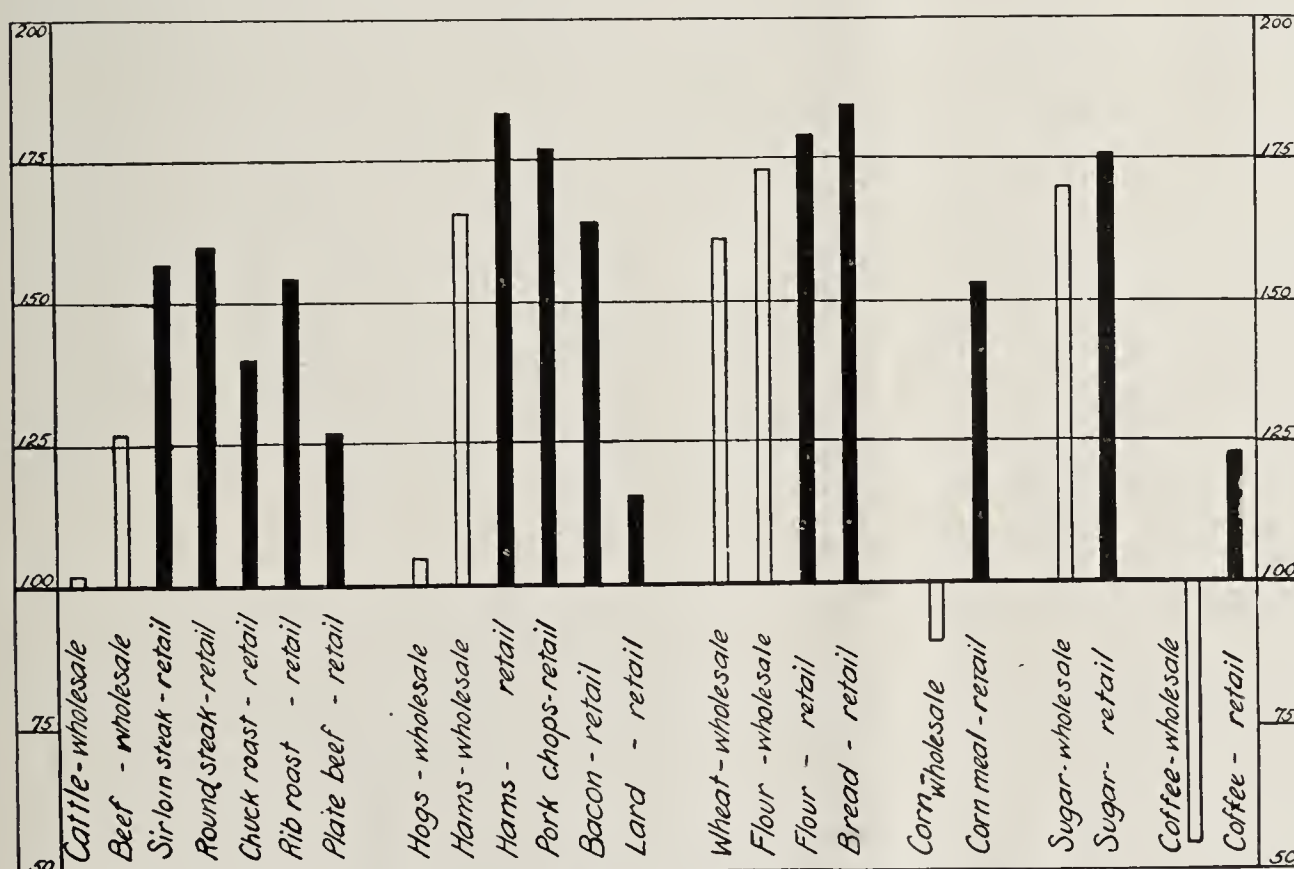
relations shown bear out the current impression that adjustment in retail prices has not been carried through to the same extent as in the case of wholesale prices. In the beef group, cattle and beef at wholesale stood respectively, 2 per cent and 27 per cent above the 1913 level, while beef products at retail sold with one exception at distinctly higher levels. Round steak was 60 per cent



Hollow columns measure 1921 wholesale prices in percentages of 1913 prices. Solid columns measure 1921 retail prices in percentages of 1913 prices.

above its 1913 price, and sirloin steak 57 per cent above the base price. Even more striking is the difference between hogs at wholesale and pork products at retail, hams standing 83 per cent above 1913 retail prices, while hogs at wholesale sold only 5 per cent above prices prevailing in that year. The wheat group stands at a uniformly even level, at wholesale and retail, and the same is true of sugar. Corn and coffee show the greatest discrepancies between wholesale and retail prices, coffee at wholesale selling at 54 per cent of 1913 prices, while at retail it sold at 123 per cent of the earlier price."

Chart II based on figures from the same source as the other, will allow a comparison of differences between prices of identical commodities at wholesale and retail, prior to the war and at a recent date. The hollow column at the left in each pair represents the margin in cents between the wholesale and retail prices of a unit of the given commodity in 1913, while the solid line represents the margin in 1921.



The hollow column at the left of each pair measures the difference in cents between the wholesale and retail prices in 1913 of a unit of the commodity named; the solid column measures the difference between the wholesale and retail prices of the same unit in 1921.



Analyzing this chart the bulletin states:

"The price differential which is here represented is not to be taken as the margin of profit for in addition to certain difficulties in securing quotations for exactly the same grades at wholesale and retail, no account is taken of handling costs in presenting these figures. These price differentials, however, serve as excellent indices of the relation between wholesale and retail prices in different lines before the war and at present.

"It is notable that with one exception the margin between wholesale and retail prices is greater at the more recent date. The price margin in the case of a pound of sirloin steak in New York was 10.1 cents in 1913; 1921 finds a margin of 12.9 cents. The difference between the

wholesale and retail price of a pound of round steak in New York was 12.8 cents in 1913 and 26.4 in 1921. Even more pronounced is the differences between the two margins in the case of sliced bacon in Chicago. In 1913 the wholesale price of bacon was 12.7 cents a pound and at retail this bacon sold at 29.4 cents per pound, the price difference being 16.7 cents. The 1921 quotations show that the wholesale price was 15.2 cents per pound and the retail price 52.2 cents, a margin of 37 cents. Relations between the prices of other commodities are indicated on the chart. The only case of a reduced differential is found in the case of fresh eggs in San Francisco, where a margin of 10.5 cents between the price of a dozen eggs at wholesale and retail in 1913, has shrunk to 7 cents in 1921."

## Program Arranged for Food Control Officials Convention

A PROGRAM of addresses, meetings and entertainment lasting over a period of four days, from November 8 to November 11, is announced by the Association of American Dairy Food and Drug Officials, for its Twenty-fifth Annual Convention held at Miami, Florida.

Beginning with the addresses of welcome by Hon. Cary A. Hardee, Governor of Florida, and E. G. Sewell, president, Miami Chamber of Commerce, the response to the address of welcome by Miss Sarah H. Vance, director, Bureau of Food and Drugs, Louisville, Ky., and the president's address by Capt. R. E. Rose, state chemist of Florida, the following list of speeches and discussions is offered:

The Qualifications of a Good Inspector, Dr. J. S. Crumbine, Secretary and Executive Officer, Kansas State Board of Health.

Discussion, W. B. Barney, Dairy and Food Commissioner, Des Moines, Iowa.

National and State Co-Operation, T. F. Pappe, Office of Co-operation, Bureau of Chemistry.

Discussion, J. L. McLaughlin, Food and Dairy Commissioner, Chicago, Ill.

Problems of the Control Official, Methods of Enforcement, Nominal Fines or Imprisonment for Persistent Offenders, Wilbur F. Cannon, Food and Drug Commissioner, Denver, Colo.

Discussion, J. J. Brown, Commissioner of Agriculture, Atlanta, Ga.

Discussion, W. A. McRae, Commissioner of Agriculture, Tallahassee, Fla.

Standards for Ice Cream, J. Q. Emery, Food and Drug Commissioner, Madison, Wis.

Address, Hon. E. F. Ladd, United States Senator from North Dakota.

Some Observations on the Epidemiology of the Problem of Botulism in the United States, Dr. J. C. Geiger, Botulism Commissioner, U. S. Public Health Service.

Discussion, Dr. R. E. Doolittle, Chief, Central District U. S. Bureau of Chemistry.

The Methods of Revision of the United States Pharmacopeia, Prof. L. E. Sayre, Director, Drug Laboratory, University of Kansas.

The Calder Bill: An Attack on the States' Constitutional Police Powers, James Foust, Food and Drug Commissioner, Harrisburg, Pa.

Discussion, Hon. Rivers Buford, Attorney-General, State of Florida.

Some Interesting Substitutions for Food and Drug Products, Dr. Arno Viehoever, Bureau of Chemistry, Washington, D. C.

The Use of Pectin in Food Products, H. S. Paine, Bureau of Chemistry, Washington, D. C.

Clean Advertising, Hon. P. S. Florea, General Manager, Associated Advertising Clubs of the World.

At an executive session and round table conference, the following subjects will be taken up for discussion:

Should not this association have a man stationed at Washington, D. C., to keep in touch with legislation pre-

sented to Congress affecting food and drug control work, and advise state officials?

The conduct of the legal side of the work. Should this be with the Attorney-General or with the Commissioner through special counsel?

The final day of the convention will be divided between amusements and the reports of the secretary, treasurer, committee on resolutions, special committees, selection of next meeting place and election of officers for 1921-1922.

Entertainment has been provided for the delegates in the form of dinners, motor trips, sea bathing at Miami Beach and the annual association banquet.

Capt. R. E. Rose, president of the association, came into office recently upon the resignation of Dr. C. L. Alsborg. He has held the position of state chemist of Florida since July, 1901, and is now serving his sixth four-year term as such. He became a member of the national association in Denver, in 1909, and was the author of the food and drug law of Florida, which was adopted in 1907.

### Farmers Study Dehydration

A good many Oregon farmers interested in economy and standardization of dehydrated fruits and vegetables are getting copies of blueprints of the Oregon tunnel dryer with improvements by E. H. Wiegand, head of the Agricultural College experiment station hort products work. Some of the Wiegand improvements that make possible the 400 to 450 lineal feet per minute of air circulation in the prune dryer are shortening the tunnel to 20 to 22 feet, furnace chamber 12 to 14 feet deep, fresh air intake as large as furnace chamber, opening from furnace chamber to tunnel width of tunnel and at least 4 feet long, stack opening equal to sum of areas between trays, low enough stack not to cause condensation of moisture in air, large radiating surface in furnace chamber, maximum of four tunnels to each chamber. Although the print commercially would be expensive, only a nominal sum—75 cents—is charged farmers by the station department.

### Fruit Juice Certificates

Holders of Federal certificates to make "fruit juices," commonly called "wine permits" in New York State, will not have to register their certificates with the county clerk as provided by the State prohibition act, according to a statement issued recently by the revenue office at Syracuse.

The government holds that the "fruit juice" certificates are not permits, and need not be registered. Other Federal permits, however, must be registered as required by the State statute. These certificates allow any person, head of a family, to make not to exceed 200 gallons of fruit juices, regardless of the alcoholic content.





## “Filled Milk” Bill Favorably Reported

Committee on Agriculture Recommends Passage of Voigt Measure—  
Would Prohibit Interstate Shipment

Washington Bureau,  
The American Food Journal  
622 Albee Building

**P**ASSAGE of the bill prohibiting the shipment of filled milk in interstate and foreign commerce will be sought of the House of Representatives shortly after Congress reconvenes, in line with the report submitted to the House on August 19 by Representative Voigt, author of the measure, from the committee on agriculture.

The Voigt bill proposes to prohibit the manufacture of filled milk in the District of Columbia, the territories, and insular possessions, and to prohibit its shipment in interstate and foreign commerce. Filled milk is defined to mean “any milk, cream, or skimmed milk, whether or not condensed, evaporated, concentrated powdered, dried or desiccated, to which has been added, or which has been blended or compounded with any fat or oil other than milk fat, so that the resulting product is in imitation or semblance of milk, cream, or skimmed milk, whether or not condensed, evaporated, concentrated, powdered, dried or desiccated.”

The bill provides a penalty of a fine not exceeding \$1,000, or imprisonment for one year, or both, and has the usual provision that the act, omission or failure of any person acting for or employed by another, within the scope of his employment or office, shall be the act of the principal, as well as of the agent or employee.

“Filled milk is an imitation of condensed or evaporated milk made by mixing condensed skimmed milk and cocoanut oil,” the committee asserts in its report. “The skimmed milk is reduced by evaporation to about half its bulk, and after this operation there is added from six to eight per cent of cocoanut fat. The resulting mixture is an exact imitation of pure evaporated or condensed milk; it has the same consistency, the same color, the same taste, and the difference in the two products can only be detected by an expert or by chemical process.

“The compound can be made more cheaply than the regular article, and, in view of the fact that the imitation is perfect, many people buy it in the belief that they are getting full condensed or evaporated milk. According to the testimony of the leading manufacturers, skimmed milk has recently sold for 35 cents per hundred, and refined cocoanut fat at 12 cents per pound. The cost of a quantity of skimmed milk and cocoanut fat sufficient to fill 48

one-pound cans of the compound is a little over 80 cents, or less than two cents per one-pound can. The retail price of the one-pound can is from ten cents up.

“In 1920 nearly 8,000,000 pounds of cocoanut fat were used in the manufacture of filled milk, taking the place of that many pounds of butter fat, injuring the market of the American farmer, and bringing his product in competition with a decidedly inferior product produced by oriental and other cheap labor and handled in many instances under shockingly insanitary conditions.”

### Not Advertised as Milk

The report recites the names under which the product is offered to the public. It is admitted that the manufacturers neither advertise it nor sell it as milk, but it is claimed that the retailers do sell it in place of condensed or evaporated full milk, that it is used for making ice cream and that a project has recently been formed to manufacture an artificial cream from skimmed or fresh milk and cocoanut fat. “A number of surveys in various parts of the country show that the compound is sold largely in sections inhabited by people unable to read English and sections inhabited by people of limited means, and not sold at all in better residential districts. The fact that it is largely sold in the sections mentioned shows that the statements on the label that the article is a compound is not a sufficient protection to the public,” declares the committee. An instance is given where the Government itself purchased two carloads of compound for the use of troops, in the belief that a full condensed milk was being bought.

“There is ample evidence that the compound is sold at retail as milk, but the interstate shipment can not be prohibited under existing law because the manufacturers label it under a trade name, and not as milk,” the committee complains. “There is no doubt that the sale of the compound violates the spirit, if not the letter, of the pure food and drugs act. There is nothing new in the proposal that milk products not containing a certain amount of butter fat shall not be transported or sold in interstate or intrastate commerce. Under the pure food and drugs act as it now stands, milk and condensed milk can not be shipped in interstate commerce unless they contain a given percentage of butter fat, and certainly it is proper to insist upon the same standard in an imitation or substitute article. Congress, by virtue of the pure food and drugs act, has barred from interstate commerce many drugs and



articles of food which do not comply with certain standards.

"While the proposed bill will not prohibit the manufacture and sale of the compound within the limits of a state, the committee is of opinion that a law prohibiting interstate shipment will suppress it, because a sufficient market can not be found without such shipment, and also because a sufficient milk supply can not be found in many states which would warrant engaging in the enterprise."

#### The Minority Report

The Government should not destroy any legitimate business, there is no demand for this legislation except from those selfishly interested in removing competition, and the sentiment of the public is in harmony with these views, according to Representative James B. Aswell of Louisiana in a report filed in behalf of the minority.

"The testimony before the committee in extensive hearings," pointed out Mr. Aswell, proved conclusively that:

"(1) The 'filled milk' complained of, composed of skim milk and vegetable oil, is not unwholesome, deleterious or

injurious to health, but a wholesome and nutritious food. To this statement the proponents of the bill agree.

"(2) 'Filled milk' is properly, clearly and plainly labeled in compliance with ample existing law, indicating distinctly the uses for which the food is recommended.

"(3) 'Filled milk' is about three cents a can cheaper than whole milk, offering an opportunity for thousands of American people limited in finance to purchase this wholesome food at prices within their reach, when the world demand is to reduce the cost of necessities.

"(4) The manufacture of 'filled milk' does not injure the dairy business, but, on the contrary, last year created a market for 200,000,000 pounds of skim milk which formerly had no market value whatever.

"It would be monstrous for the Congress, as proposed by this bill, to legislate out of existence any legitimate business, heedless of the millions honestly invested. The bill is of doubtful constitutionality. If the retailers practice any deception the remedy is regulation of the distributors, and not destruction of private business."

## Butter Tax Decision is Overruled

### Attorney General Daugherty Reverses Palmer, Who Classified Bulk of the Product as Adulterated

THE use of lime water or other neutralizing agents to reduce the acidity of sour cream used in the manufacture of butter does not render the finished product subject to the adulterated butter act of May 9, 1902, under a ruling handed down by Attorney General Daugherty. This decision overrules an opinion rendered by Attorney General Palmer on December 31, 1920, holding such butter to be adulterated butter within the meaning of section 4 of the act. Reconsideration of the matter was brought about by Commissioner of Internal Revenue Blair, who, upon reviewing the hearings held just before he becomes commissioner, felt that the former opinion was too drastic.

The Attorney General's decision brings to a close a fight which has been waged for a number of years and which, for a time, threatened to revolutionize the whole butter industry as it exists today. The upholding of the first opinion from the Department of Justice would have brought under the scope of the act of 1902 practically 50 per cent of all the butter manufactured in this country, and would have imposed upon half of the butter industry heavy taxes. Under the adulterated butter law, a manufacturer of adulterated butter is required to pay a special tax of \$600 a year, a wholesaler of adulterated butter would pay a special tax of \$480, and a dealer in adulterated butter is required to pay a special tax of \$48. In addition, the manufacturer is required to give bond.

The opinion of Attorney General Daugherty is of considerable interest to the industry and is printed in full as follows:

Department of Justice,  
Washington, August 12, 1921.

Dear Sir:

I have the honor to acknowledge the receipt of your letter of the 20th ultimo requesting an expression of my opinion upon the question whether butter produced from sour cream, the acidity of which has been reduced by the use of lime water or other neutralizing agent before churning, is adulterated butter within the meaning of Section 4 of the Act of May 9, 1902 (32 Stat. 193, 194), and therefore taxable as such.

Section 4 of the Act of 1902 provides that for the purpose of the Act "butter" shall mean an article of food as defined in the Oleomargarine Act of August 2, 1886 (24 Stat. 209), namely:

the food product usually known as butter, and which is made exclusively from milk or cream, or both, with or without common salt, and with or without additional coloring matter.

The act then defines "adulterated butter" to mean a grade of butter produced by mixing, reworking, re-churning in milk or cream, refining, or, in any way producing a uniform, purified, or improved product from different lots or parcels of melted or unmelted butter or butter fat, in which any acid, alkali, chemical, or any substance whatever is introduced or used for the purpose or with the effect of deodorizing or removing therefrom rancidity, or any butter or butter fat with which there is mixed any substance foreign to butter as herein defined, with intent or effect of cheapening in cost the product, or any butter in the manufacture or manipulation of which any process or material is used with intent or effect of causing the absorption of abnormal quantities of water, milk, or cream.

And adds the following definition of "renovated" or "process" butter:

butter which has been subjected to any process by which it is melted, clarified or refined and made to resemble genuine butter, always excepting "adulterated butter" as defined by this act.

The butter-making industry in the United States has undergone marked changes since the passage of the Act of May 9, 1902. Neutralization and pasteurization of cream as now commonly practised were not then in general use. Other methods and practices then in use were the targets at which the statute was aimed. Whether the neutralization of cream, the practice now in question, comes within the condemnation of the statute, involves an interpretation in the light of the history and development of the butter-making industry. Accordingly, I have conferred with the experts of the Department of Agriculture and have examined the record of the hearing before the Commissioner of Internal Revenue with a view of informing myself with respect to these matters. As the result, the following outline is offered; but only as a background for the interpretation of the act and not as findings of fact.

1. Prior to the passage of the Act of 1902 the production of creamery or factory butter in the United States was largely carried on under what was known as the "whole milk system." That is, the whole milk was carried by the farmer to the creamery where the cream was separated by a power separator, and the skimmed milk returned. The cream thus separated was permitted to sour



spontaneously or by the addition of a starter of sour milk, and was churned as soon as ripe.

This system, involving the transportation of the milk both to and from the creamery, necessarily restricted the sale of cream to creameries within wagon-haul from the farm. Because of their dissatisfaction with a system which entailed so much time and labor and which put them at the mercy of the local creamery in the matter of price, the farmers in large number utilized their surplus cream in the production of so-called "farm butter."

Farmers' butter was largely sold to customers in the neighborhood or within easy reach, or was sold or traded in to storekeepers. The storekeepers sold so much of the butter as was good. A large part of it, however, was unfit for consumption. Consequently numerous lots of low grade, damaged and thoroughly bad butter had to be disposed of as grease or go to establishments engaged in manipulating and renovating such material so as to bring it into merchantable form as a food product.

Two methods of renovating such butter were employed. The first, known as "ladling," consisted in soaking the different lots or parcels of butter in water. The butter then was kneaded in the water, placed in a butterworker, colored, salted, worked and made ready for the market. The process was calculated to cause the butter to absorb abnormal amounts of water, in addition, some ladlers worked in glucose and other substances foreign to butter designed to cheapen the cost.

Butter too poor to be ladled was sent to the "process" or "renovating" factory. The material there was melted and the butter fat separated from the other constituents of the butter—water, salt, and impurities. The remaining butter fat (a commodity distinct from milk, cream, or butter, although a constituent of each) was placed in tanks and warm air was forced through it for the purpose of deodorizing it and removing rancidity. Thereafter it was reworked or rechurned with milk or cream and sold as butter.

In addition, chemicals (so-called "butter increasers") were sometimes employed to cause the butter to absorb amounts of water, milk or cream, and thus to cheapen cost. The use of such chemicals was exposed by Farmers' Bulletin No. 12, entitled "Nostrums for Increasing Yield of Butter," issued by the Department of Agriculture in 1893. Special churns, designed to accomplish the same result, also were on the market.

2. The introduction into general use of hand cream separators in 1903 and 1904 revolutionized the handling of milk and cream. By this device the farmers were enabled to retain their skim milk for feeding purposes and to haul only the cream to town and to ship such cream by rail because of the decreased weight due to separation from the milk.

The practicability of the shipment of cream by rail resulted in the establishment of large creameries (so-called "centralizers"), drawing their supplies of cream from considerable distances. This opened a market to thousands of farmers not located within hauling distance of a local creamery. It also provided a competitive market for the farmers who had been at the mercy of the local creamery in the matter of price.

By far the greater part of the cream utilized in the manufacture of butter is produced on farms on which dairying is an incident to general farming. Because of the inconvenience and expense of handling small amounts few farmers market their cream daily. The fact that the cream generally is retained a day or so before shipment, combined with varying climatic conditions and the absence of cooling facilities on most farms, makes it impossible for a large part of the production to reach the creamery in a sweet condition.

The first step in the manufacture of most creamery butter is pasteurization of the cream. Pasteurization means subjecting the cream to a temperature of 180 degrees F. flash heat or 145 degrees F. sustained heat. Sour cream when subjected to such temperature curdles and becomes stringy or ropy. The cream adheres to the walls of the pasteurizers and forms an insulation against heat, thus preventing complete pasteurization. This results in only a partial elimination of bacteria and in a decreased yield in churning, since much of the fat becomes encased in nodules and is carried off in the buttermilk.

The main if not the sole purpose of the so-called "neutralization" of cream is to reduce the lactic-acid content so as to prevent curdling in pasteurization. While neutralization and pasteurization together might in some degree

operate to deodorize cream, that is incidental to the main purpose. The method employed is to test a given batch of cream for acidity and to introduce therein a sufficient amount of lime water to reduce the acidity to the point necessary for efficient pasteurization. Lime is a natural constituent of butter, and the amount employed in neutralizing is comparatively negligible, amounting only to a small fraction of one per cent.

The extent to which the lime thus introduced comes in contact with and affects the butter fat is a question on which the witnesses appearing before the Commissioner of Internal Revenue were in disagreement. One view was that the butter fat is entirely protected by the casein and that the added lime water completely passes off in the butter milk. The other view was that while the greater part passes off in this way, an appreciable amount is carried into the butter. The Department of Agriculture in 1917 issued a bulletin (No. 524) to the effect that butter made from neutralized cream can be detected by an analysis of the salt-free ash. Whatever may be the fact in this particular, the amount of lime (if any) so carried over adds only infinitesimally to the natural lime content of the butter and is in no sense deleterious.

3. Coming then to interpret and apply the Act of May 9, 1902, it appears that three types of butter are branded as adulterated thereby:

First.—Butter in any way produced from different lots or parcels of melted or unmelted butter or butter fat in which any substance whatever is introduced or used for the purpose or with the effect of deodorizing or removing therefrom rancidity.

Second.—Any butter or butter fat in which there is mixed any substance foreign to butter as in the act defined, with intent or effect of cheapening in cost the product.

Third.—Any butter in the manufacture or manipulation of which any process or material is used with intent or effect of causing the absorption of abnormal quantities of water, milk or cream.

Butter manufactured from cream neutralized in the manner described clearly does not come within the first two categories since it is not manufactured from "different lots or parcels of melted butter or butter fat," and since there is introduced therein no substance "for the purpose or with the effect of deodorizing or removing therefrom rancidity" and no "substance foreign to butter with intent or effect of cheapening in cost the product." Equally clearly such butter is not embraced in the third category since there is employed in its manufacture no process or material "with intent or effect of causing the absorption of abnormal quantities of water, milk, or cream."

Interpreting the act in the light of the conditions in the industry at the time it was passed, it is clear that Congress in the first two instances had in mind only the production of "renovated" or "process" butter. In the third instance Congress had in mind only the production of butter by use of the so-called "butter increasers," special churns, etc. As regards the first two classes of "adulterated butter" as defined by the act, they differ from "renovated" or "process" butter as therein defined only in that some chemical or substance is introduced therein to deodorize or remove rancidity or to cheapen the cost of production. In neither case does the act relate back to the original churning. The third category apparently so relates back, but we are not concerned with that category here.

That the act does not cover the initial stages of the manufacture of butter appears from the proceedings in Congress attending its passage. The debates all tend to show that the thing aimed at was the production of renovated butter from rancid and decomposed butter or butter fat in which any chemical was used either as a deodorizer or to cheapen the cost of production. During the debate in the House of Representatives Congressman Parker attempted to amend the bill so that it would cover the use of chemicals at any stage in the manufacture of butter. The amendment offered was to strike out the words:

"produced by mixing, reworking, rechurning or in any way producing a uniform, purified, or improved product from different lots or parcels of melted or unmelted butter or butter fat;"

which would have made the definition of adulterated butter read:

"a grade of butter in which any acid, alkali, chemical or any substance whatever is introduced or used for the purpose or with the effect of deodorizing or removing therefrom rancidity."



In explanation of his amendment Congressman Parker said:

If butter is to be regarded as adulterated because it contains certain ingredients, then it is adulterated whether those ingredients are put into it in reworking or in the original manufacture. Let us strike out everything in this bill that has to do with the reworking, and provide in effect (for that is what I presume is meant) that adulterated butter is hereby defined to mean a grade of butter in which any acid, alkali, chemical, or any substance whatever is introduced or used for the purpose or with the effect of deodorizing or removing therefrom rancidity.

What difference does it make whether the butter is reworked? The butter should be regarded by the law as adulterated, not only if it has been reworked and certain substances added, but also it is just as much adulterated if those substances or ingredients are used in the beginning. (57th Cong. 1st sess. v. 35, pt. 5, p. 4600.)

The proposed amendment was rejected (35 Cong. Rec. part 5, pp. 4600-4601) and that fact has a direct bearing on the question of legislative intent. *United States v. United Shoe Machinery Co.*, 264 Fed. 138, 174.

4. It results that in my opinion butter manufactured from sour cream, the acidity of which has been reduced by lime water in the manner outlined, is not adulterated butter within the meaning of Section 4 of the Act of May 9, 1902. Whether it is "butter" within the meaning of that act it is not necessary to decide. If any perceptible amount of the added lime is carried into the butter it could not be said that the product "is made exclusively from milk or cream or both, with or without common salt, and with or without additional coloring matter." But the act does not purport to cover all grades of butter or butter products. Being a taxing act, its terms can not be enlarged to cover products clearly not embraced therein. *American Net, etc., Co. v. Worthington*, 141 U. S. 468. Consequently, it does not follow that because butter made from cream to which a small amount of lime has been added does not come within the statutory definition of "butter," it must necessarily come within the category of "adulterated butter." Conceivably such a product may be neither "butter," "adulterated butter," or "process or renovated butter" within the meaning of the act.

5. It further results from the interpretation I have put on the Act of May 9, 1902, that the opinion rendered on December 31, 1920 (32 Op. A. G. 377) must be regarded as overruled. This does not mean, of course, that the door is left open to unscrupulous manufacturers to produce butter from filthy, decomposed, or putrid substances, or to add to their product any poisonous or deleterious ingredient. Any manufacturer so doing would be subject to prosecution under the Act of June 30, 1906 (34 Stat. 768), entitled "An act for preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein, and for other purposes."

Respectfully,

H. M. DAUGHERTY,  
Attorney General

### Milk Producer Mentioned for Trade Commission

The appointment of Milo D. Campbell of Coldwater, Mich., president of the National Milk Producers' Federation, as a member of the Federal Trade Commission, is being urged upon President Harding by milk producers' association, dairymen and farm organizations throughout the country. The term of John G. PoHIPard as a member of the commission expires this month.

A delegation representing a large number of national farm and milk associations visited the White House on August 26 to urge Mr. Campbell's appointment upon the President. In addition to suggesting Mr. Campbell orally during the conference accorded the delegation by the President, a letter signed by a dozen organizations and farm publications was also submitted. The President assured the delegation that he would give due consideration to the appointment suggested.

### Food Expert Appointed on Commerce Position

The appointment of E. C. Montgomery, Ithaca, New York, a specialist in marketing foodstuffs, was announced at the Department of Commerce Aug. 18. Mr. Montgomery is to take charge of foodstuffs division created in the Bureau of Foreign and Domestic Commerce under the provisions of the recently enacted export industries legislation.

For the past ten years Mr. Montgomery has given special study to the world production, distribution, uses and consumption of food products. During the last eighteen months he has been in charge of the foreign markets division of the Bureau of Markets of the Department of Agriculture. In that department he developed an organization with foreign representatives which has been summarizing world-wide production and consumption of agricultural products as a basis for trade promotion and with a purpose of assisting in determining the agricultural policies of this country.

In his new position in the Bureau of Foreign and Domestic Commerce he will take steps to establish contracts with the centers of the foodstuffs trade in connection with the development of export sales. He will work in close co-operation with producers and exporters of foodstuffs and will endeavor to compile information which will be of special service to Americans engaged in that line of effort.

Mr. Montgomery is a graduate of the University of Nebraska. He is a former member of the faculty of that university and of Cornell University.

### New Labeling Bill for Margarin

The plain marking of oleomargarine or other butter compounds in terms which will readily inform the public that the product is not pure butter is required under the terms of a bill which was introduced in the House of Representatives just before Congress recessed by Representative Browne of Wisconsin.

A fine of from \$100 to \$500 for each offense would be provided for violation of the terms of the act, which would make it unlawful for any person to advertise in any manner or to designate upon any package or other container any substance, article, product or compound, made wholly or partly out of any fats, oils or oleaginous substances or compound thereof designated under the laws of the United States as oleomargarine or butterine unless such advertisement or designation shall distinctly and clearly set forth the character of such substance, article, product or compound by the use of the word oleomargarine or the word butterine, and it shall be unlawful to use in any such advertisement or designation on or in connection therewith the word "butter," or any word such as "Holstein," "Jersey," or "Guernsey," or any other word which is commonly used as designating a known breed of cows.

The measure has been referred to the committee on agriculture.

### Declare Missouri Tax Law Valid

Missouri's State law, imposing a special tax on soft drinks is valid, according to a decision of the Supreme Court, handed down on July 22. The opinion was written by Judge Walker. The law was attacked by the Coca-Cola Bottling Co., of St. Louis, which instituted a suit to determine the constitutionality of the measure, alleging that it levied an excessive tax. It was sought to prohibit the state beverage inspector from collecting tax from the company.

The law in question was amended by the regular session of the Legislature this year, lowering the 1 1/2 cent per gallon tax on soft drinks to three-fifths of a cent per gallon, and the tax of 10 cents per gallon on sirups and flavors to 5 cents.

The receipts under the new law probably will amount to \$75,000 a year. Most of the large firms have been withholding the tax on the theory that the law would be held invalid.



# NEWS OF THE FOOD TRADES

## Packers to Teach Public Truth About Meat

### Thomas E. Wilson Asks Cooperation of Producers in Enlightening Consumers

Thomas E. Wilson, president of the Institute of American Meat Packers, has written A. Sykes, chairman of the Sub-Committee on Orderly Marketing of the Live Stock Marketing Committee of Fifteen, suggesting that the Live Stock Marketing Committee of Fifteen, representing the live stock industry, and the institute, representing the packing industry, "co-operate at once in planning, developing and conducting an effective national educational campaign to give consumers correct information about the food value of meat."

After referring in his letter to an outline by C. L. Harlan, representing the Sub-Committee on Orderly Marketing, regarding the points to be discussed in considering the possible advisability of establishing co-operation between packers and producers, Mr. Wilson continued in part:

"Without entering into details as to the structure and form which producer-packer co-operation should take, permit me to cite one example in answer to the question, 'What shall be the basis of such co-operation?'"

#### Should Co-operate in Campaign

"I suggest that one basis of such co-operation—and I am interpreting this term more widely than the technical problem of orderly marketing alone—should be a joint effort to offset some of the attacks which have been made on meat as such; to develop comprehensive working information concerning the food value of meat, and to educate the public as to the value of meat in the diet—all of this with a view to increasing meat consumption. Such an increase would be of economic benefit to the meat and live stock industry and, indirectly, through increased production to the public.

"It seems to me, moreover, that the movement of the available seasonable supplies of live stock to market in such volume that the highest net return may be secured for the producers' involves as a corollary the necessity of informing and guiding the consuming demand. From the producer's standpoint, it is sometimes more advantageous to increase the demand than to curtail shipments or production. This problem also has its reasonable aspect, as we are keenly aware just now in the case of forequarter meats.

"Too little has been done, either by live stock producers or by meat packers, to offset the campaign of disparagement which has been waged systematically against the beef, pork and mutton derived from the farmer's cattle, swine and sheep. Manufacturers of other food commodities have advertised the merits of their products, sometimes by disparaging meat.

#### Attacks Should Be Answered

"Not only should such attacks be an-

swered, but also should there be some effort to spread affirmative information regarding the high food value of meat.

"In my opinion, there is little doubt that at least a part of the decrease in meat consumption per capita is attributable to what may be called anti-meat propaganda, propaganda usually founded on erroneous data, which has misled the layman, the home economist and the physician alike.

"If meat consumption per capita in 1920 had been as great as in 1900, the amount of meat which would have been consumed last year would exceed the amount actually consumed by nearly three billion pounds. This excess alone would have been far greater than our normal annual exports of meat and meat products. Do you not believe, then, that the recovery of this potential consumption is of interest to the live stock producer?"

"This question brings me to the central point of my letter:

"The meat packing industry feels that it is high time to give the public correct information concerning the food value of meat. We believe that such information would tend to increase meat consumption. However, we are halted by the status of a proposal resulting from two conferences, which were called by some of the producers' associations and in which the Institute was invited to, and did, participate.

"These two conferences, if my memory serves me accurately, resulted in the appointment of an Eat More Meat Organization Committee and in a resolution directing the chairman of this committee to place before the Live Stock Marketing Committee of Fifteen the necessity of an educational campaign and to seek the co-operation of that committee.

"Just what has been done, I do not know. The Eat More Meat Organization Committee has held no meetings. I assume this is because the matter is in status quo.

#### Proposes Immediate Campaign

"The Institute of American Meat Packers now respectfully proposes that the Live Stock Marketing Committee of Fifteen, representing the live stock industry, and the Institute of American Meat Packers, representing the packing industry, co-operate at once in planning, developing and conducting an effective national educational campaign to give consumers correct information about the food value of beef, pork and mutton.

"In order that plans and efforts may not be retarded, we feel free to request a definite answer at the earliest date consistent with the convenience of the Live Stock Marketing Committee of Fifteen. We feel that the problem should be approached at once, and it is for this reason that we ask an early answer in order that, if the Committee of Fifteen views our suggestion adversely, we may proceed promptly with our own efforts, through the Institute's recently appointed Committee on Nutrition, composed of prominent scientists within the meat industry, and seek the co-operation of the numerous individual live stock associations and other agencies which have expressed interest in this matter."

## Plan for Canned Foods Week Ready

### First Arranged to Hold It in November, Late Decision Is to Postpone It Until March

At a meeting of the Board of Directors of the National Canners Association in Chicago, Wednesday and Thursday, June 22 and 23, it was unanimously decided that the Association should put on a special Canned Foods Week. Later it was decided by the committee to postpone this event until next March to give the committee plenty of time for the raising of necessary funds and making all other plans required to make the affair a real success.

At the Chicago meeting the following committee was appointed to have charge of the work:

Royal F. Clark, Beaver Dam, Wis., chairman; Russell B. Kingman, Orange, N. J.; L. A. Babcock, Chicago, Ill.; James A. Anderson, Morgan, Utah; Bismarck Houssels, Los Angeles, Cal.

Mr. Clark will act as national chairman and the other four members will cover the four territorial sections of the country, East, Central States, Middle West and West Coast.

This movement is to be nation-wide in character and the interest and co-operation of the Canning Machinery and Supplies Association, National Food Brokers Association, National Wholesale Grocers Association, Southern Wholesale Grocers Association, National Retail Grocers Association and one hundred and fifty railroad presidents have been secured. Canned foods will be featured on dining car menus all over the country. Other distributive organizations will be approached and their interests solicited. The main idea will be to focus the attention of the country on canned foods for a definite period each year.

Funds for conducting the campaign will be raised by voluntary contributions. The allied organizations that will co-operate in the movement will solicit contributions from their own members.

The following committee has been appointed to represent the different districts:

California, Preston McKinney. Colorado, P. H. Troutman. Connecticut, J. C. De Mille. Delaware, W. O. Hoffecker. Honolulu, J. D. Dole. Illinois, W. A. Miskimen. Indiana, J. J. Rogers. Iowa, Sid R. Clift. Kentucky, George Nagle. Louisiana, J. H. Jastremski. Maine, W. E. Elwell. Maryland, Wm. Silver. Massachusetts, J. C. De Mille. Michigan, Frank Gerber. Minnesota, J. E. Barr. Missouri, Roy Nelson. New Jersey, E. Pritchard. New York, Chas. H. Tugwell. Ohio, Roy Irons. Oregon, F. P. Kendall.



Pennsylvania D. E. Winebrenner. Rhode Island, J. C. De Mille. Tennessee, W. B. Stokely. Utah, H. L. Herrington. Virginia, B. F. Moomaw. Washington, Guy P. Halferty. Wisconsin, W. C. Leitsch. Milk Cannery, Walter Page, Chicago. Meat Cannery, Geo. A. Eastwood, Chicago.

\*Excepting the City of Baltimore which will be represented by D. H. Stevenson.

These chairmen will appoint sub-committees which will get into touch with the canners of the respective districts and solicit contributions for the campaign.

The purpose of the special Canned Foods Week will be:

To make known to the consumer the benefit of canned foods and their quality and convenience.

To stimulate the interest of consumers in the purchase of canned foods.

To do this in a way which will create a higher regard for canned foods so that its sale and effect will contribute permanent good will for such foods.

Special attention will be given to dealers' co-operation in connection with the retail grocers. The proposition is one of such magnitude that it has not been definitely determined what material may be supplied to the dealers. This, of course, will be largely determined by the size of the appropriation. There has been enough interest shown in the proposition, nevertheless, to assure a display in keeping with the importance of the work.

The extent of accomplishment of Canned Foods Week depends on the concerted and co-operative effort of every interested factor related to canning, be it grocer, canner, broker, wholesaler or retailer. This includes the co-operation of manufacturers, dealers and others who enjoy profit indirectly from the manufacture, transportation, or sale of canned food.

ROYAL F. CLARK, Chairman.

## New Swiss Tariff on Meats, Lards and Oleo

The following table shows the new Swiss customs tariff on meats, lard and oleo, effective July 1, compared with the old tariff. Conversions have been made into U. S. currency on the normal basis of exchange of 1 franc being worth 19.3 cents. One hundred kilograms equal 220.46 lbs.

Articles—	Former tariff		New tariff	
	Francs	per 100 Cts.	Francs	per 100 Cts.
Hams and shoulders	14	1.2	75	6.5
Bacon, tongues, jowls, and boneless hams	20	1.7	75	6.5
Canned meat	25	2.1	50	4.3
Meat extracts	40	3.5	50	4.3
Sausages	15	1.3	75	6.5
Lard (pure)	10	.8	20	1.7
Oleo	10	.8	15	1.3

The United States exported 3,603,960 pounds of lard to Switzerland during the 12 months ending June 30.

## Personal

Howard Beatty of the Glidden Manufacturing Company, Chicago, has been elected recording secretary of the Institute of Independent Margarine Manufacturers.

# Not Alarmed Over Live Stock Decrease

## Thomas E. Wilson Says Apparent Shortage Is Due to Marketing at Early Age.

Thomas E. Wilson, president of the Institute of American Meat Packers, has prepared the following statement analyzing the changing relations of live stock population to human population, as indicated by the recent census figures:

"Official census figures show that the cattle, swine and sheep on farms in this country are fewer by millions than had been supposed.

"This fact has excited considerable comment. In some cases, the figures have been interpreted as indicative of an alarming shortage of live stock; in other cases, an attempt has been made to minimize the significance of the apparent decrease in live stock population. The whole subject has been beclouded by the fact that each of the last three decennial censuses was taken at a different time of year.

"Here are the actual numerical facts:

"According to the census figures, the number of cattle on farms on January 1, 1920, was 66,810,836; swine, 59,368,167; and sheep, 34,984,524. As compared with another, and previous, official estimate for the same date, these figures are less by 1,558,164 in the case of cattle, which includes both beef and dairy animals; 12,358,833 in the case of swine, and 12,129,476 in the case of sheep. The number of cattle reported by the census—35,424,458—was 9,325,542 less than the official estimate.

"The following table shows the number of cattle, swine and sheep on farms in this country for every 100 inhabitants at the date of each of the last three decennial censuses:

Date	Cattle	Swine	Sheep
Census of June 1, 1900..	89	87	81
Census of Apr. 15, 1910..	67	63	57
Census of Jan. 1, 1920..	62	55	33

"It is just at this point that agricultural writers differ most. Some say that the apparent decrease in the ratio of live stock to human population is of no significance. Others insist that it indicates an alarming shortage in our live stock and meat supplies. I think that somewhere between these two extremes the truth will be found.

"On the face of the figures, the shortage does appear highly alarming. But there are several factors to be considered.

"In the first place meat animals are marketed now at an earlier maturity than was the case in 1900. In effect, this tends to increase our annual live stock supplies provided that other elements remain constant. For example, if the number of swine on farms should remain unchanged while improved methods made it possible to market hogs at a younger age than now, this would have the practical effect of enlarging our pork supply. It is as though an industrial enterprise increased its turnover, without increasing its capital. The volume of annual production would be larger. In the same way, the fact that there are fewer cattle on farms at a

given time does not necessarily mean that the number marketed annually is less.

"Moreover, the different monthly dates on which the several censuses were taken constitute an element that not only is significant but also is difficult to appraise accurately.

"As an illustration, the 1920 census showed only 55 swine for every 100 inhabitants, whereas the census of 1910 had showed 63 swine for every 100 inhabitants. But the 1920 census was taken as of January 1 and the 1910 census as of April 15, so that the latter included spring pigs. On the other hand, the 1920 census included many hogs which would be sold before April 15. Such considerations make it difficult to know how much to discount the apparent diminishing ratio of live stock to human population.

"A third factor which should be taken into account is the decrease in meat consumption per capita. On January 1, 1900, there were 89 head of cattle for every 100 human inhabitants; on June 1, 1920, there were only 62 head. But one steer now furnishes meat for more persons than did a steer of the same weight twenty years ago. Beef consumption per capita in 1920 was 56.4 pounds (dressed weight); in 1900, it was 79.2 pounds. The consumption per capita of other meats also has decreased since 1900.

"On the whole, it is my opinion that the best index to the relation of live stock production to population is not the number of live stock on farms at given dates as compared to human population on the same dates. Too many conflicting and indeterminable factors enter into such calculations, as I have tried to show.

"A better index, I think, is the relation between meat production, which reflects marketings for slaughter, and human population. The following table illustrates the point:

Production of Meat per Capita			
(Population as of January 1 each year)			
Years	Population	Meat prod.	Meat prod.
	Jan. 1	Dressed Wt.	per cap.
		lbs.	lbs.
1900	75,450,955	16,275,616,000	215.1
1910	91,500,350	15,846,000,000	173.2
1920	105,710,620	17,987,000,000	170.1

"These figures seem to indicate clearly that population is increasing faster than live stock production and, hence, faster than meat production. During some of the war years, when live stock production was stimulated, both meat production and meat consumption per capita gained some ground in their race with increasing population. But now, when the price of meat and the price of live stock are much lower, we seem to be retrograding, and population seems once more to be outstripping live stock and, hence, meat production.

"Meat consumption during 1920, however, showed a decline of less than three pounds per capita as compared with 1913. An increase in consumption per capita would result in an economic benefit to both producer and consumer, since it would increase live stock production and, therefore, the meat supply."



# Peanut Oil Import Reaches Low Ebb

## War Responsible for Oversupply of Vegetable Oils

The year 1919 saw imports of peanut oil as well as practically all the other vegetable oils reach their highest figure, when the United States imported 158,406,925 pounds. The need for fats both in this country and abroad during the war was so great that a very large demand was created for imported vegetable oils which were used in the preparation of lard and butter substitutes, salad oils, soaps, and very extensively for a time in the manufacture of glycerin. After the cessation of hostilities, however, the demand fell off considerably not only in this country but in Europe as well. As a result importers of vegetable oils in the United States found themselves oversupplied with oils of all kinds.

The subsequent drop in prices brought about a marked decrease in imports. For the last six months of 1920 only 17,235,811 pounds of peanut oil were tabulated as coming into the United States compared with 80,577,313 pounds received during the first half of that year and 89,583,055 pounds during the last six months of 1919.

Still more noteworthy is the sharp sag in the receipts of peanut oil during the first six months of the current year. The low prices of peanut oil in this country and the uncertainty as to when the emergency tariff, with its duty of 26 cents per gallon, would be passed by Congress and become effective, all combined to bring the total imports of peanut oil for this period down to 1,440,370 pounds.

The second most important source of foreign supply during the month of June was France, from which country 112,279 pounds were received. This would tend to indicate that the crushing of peanut oil is again becoming an important phase of the vegetable-oil industry around Marseille, and that France, which until 1915 was the chief source of our foreign supply, is striving to regain her lead in this field. During the six-year period 1912-1917, ending June 30 of each year, the average annual import of peanut oil from France amounted to 2,879,692 pounds. There were practically no imports of peanut oil from France during the past three years because of conditions brought about by the war. The French colonies on the West Coast of Africa, Mozambique, China, Bombay, and the Coromandel coast of India all aid in contributing the peanuts from which the French peanut-oil exports are crushed.

The most significant development in the peanut-oil trade of the United States has been the growth of the Japanese market as a source of our foreign supply. During the fiscal year 1911-12 Japan was the least important of all foreign sources, furnishing less than 1 per cent of a total importation of 6,906,767 pounds. The quantities supplied by that country during the next three years were even less. During the fiscal year ending June 30, 1916, however, Japan

suddenly changed from the least important to the most important source of foreign supply, furnishing during that year 5,457,597 pounds, out of a total importation of 11,376,149 pounds. Since that year Japan has remained the most important source of the peanut-oil purchased by American importers.

China, with its millions of small farms upon which thousands of tons of peanuts are grown, is the chief source of supply for the greater part of the peanut oil coming from Japan. Japanese interests, with mills in Japan and Manchuria and other parts of China, control a great part of the peanut-oil trade of China. Much of the peanut oil shipped from China therefore passes through Japan and so appears on the records of the Bureau of Foreign and Domestic Commerce, from which these tabulations are taken, as originating in Japan.

The island of Hongkong has also been an important source of our foreign supply. During 1919 no less than 8,188,486 pounds came from that place. Most of this oil is also crushed from Chinese nuts. China is the world's most important source of peanuts and peanut oil.

Table 1, accompanying this article, shows the imports of peanut oil by the United States during the past three calendar years and the first six months of 1921.

Table 1—Imports of Peanut Oil

Exported from—	1918 Pounds		
France .....			
Netherlands .....			
China .....	25,218,356		
Hongkong .....	1,164,350		
Japan .....	35,939,572		
Other countries .....	11,079,491		
Total .....	70,401,769		
	1919	1920	Jan. 1 to June 30, 1921
	Pounds	Pounds	Pounds
.....		34,912	395,695
.....		86,012	36,354
48,955,475		17,070,705	28,403
8,188,486		6,931,044	909,668
95,276,578		71,343,504	6,332
5,986,386		2,346,947	3,918
158,406,925		97,813,124	1,440,370

Prior to July 1, 1919, the exports of peanut oil were not separately tabulated by the Bureau of Customs Statistics, but were included in figures showing the exports of all other vegetable oils. Since that date, however, the exports of this commodity have been large enough to warrant separate mention. Table 2 shows the exports of peanut oil from the United States from July 1, 1919, to June 30, 1921.

Table 2.—Exports of Peanut Oil

Destination	July 1- Dec. 31, 1919		Jan. 1- Calendar June 30, 1921
	Pounds	Pounds	Pounds
France .....	1,570,459	433,688	.....
England .....	1,454,873	564,424	.....
Norway .....	679,001	203,958	86,331
Sweden .....	162,750	96,407	179,385
Canada .....	34,717	75,489	141,873
Denmark ...	61,625	.....	18,750
Mexico .....	787	2,743	308,808
All others...	377,591	48,516	14,754
Total ...	4,341,803	1,425,225	749,901

# Non - Intoxicating Ex- tracts Urged

## Flavoring Extract Manufacturers' Association Hears Appeal from Federal Official

Addressing the Flavoring Extract Manufacturers' Association of the United States, at its twelfth annual convention held in St. Louis, J. M. Doran, Chief of the Chemical Division of the Federal Prohibition Department, in the course of an address on "Non-Beverage Alcohol for Use in Flavoring Extracts," asserted that one of the big problems facing the prohibition enforcement bureau was the apprehension of persons who under the cover of legitimate business endeavor to obtain supplies of alcohol to use for illegitimate purposes. "The past few months," he declared, "have seen the development of a class of so-called flavoring extracts which will undoubtedly have to receive immediate attention. The quantity of imitation flavors, such as peach, apricot, rum and brandy, that are sold evidences the fact that they are not all used for cooking." The speaker urged the manufacturers to make extracts so they would be unfit for intoxicating beverage purposes.

Among others who addressed the meeting were G. A. Russell of the United States Department of Agriculture who spoke on essential oils, and W. A. McCormick, whose topic was "Standardization of Bottles."

In the course of a discussion on the practicability of making vanilla extract, Dr. C. E. Caspari, of St. Louis, said that a 40 per cent aqueous solution of glycerin would produce the same results as alcohol, but that the marketing of that product would require education of the consumer, because it did not have the aroma of the alcoholic preparation, being less volatile.

The association went on record as affirming its intention and desire to cooperate with the prohibition enforcement bureau to the end that holders of non-beverage alcohol permits shall keep faith with the spirit as well as the letter of the law, and pledged itself to continue its effort to find some agent, other than alcohol, which will produce high-grade extracts.

The research committee of the association was instructed to investigate imitation extracts not now permitted by the prohibition bureau to be manufactured, and to endeavor to suggest some method of determination which may remove the objection to these flavors. Special reference was made to imitation orange and almond, for which, it is held, there is a legitimate field.

Vigorous protest was made against the enactment of the supplemental prohibition bill in the language and form in which it had been reported in Congress, holding that, if enacted in that form, it could seriously injure the industry.

Officers elected for the ensuing year are: President, R. E. Heekin, Cincinnati; vice-presidents, L. B. Parsons, New York, Gordon M. Day, Milwaukee, and R. H. Bond, of Baltimore; secretary, Gordon M. Day, Milwaukee; treasurer, F. L. Beggs, Newark, Ohio.



## U. S. Sending Sugar to All Parts of World

### Even Cuba, "The World's Sugar Bowl," Receives Shipments of Refined Products from U. S.

Taking sugar to Cuba may be like "carrying coals to Newcastle," yet millions of pounds of American refined sugar, much of it produced in Cuba as raw and sent to "The States" for refining, go back each year to the island which is aptly called "The World's Sugar Bowl."

The cross-currents of sugar distribution are as numerous as the strands of a spider's web. In 1920, 50 countries sent sugar to the United States. In 1921, during the first six months, the United States sent sugar to 44 countries, 32 of which produce sugar and 24 of which sent sugar to us last year.

The figures for the first six months of 1921, which have been issued by the U. S. Customs Department, show exports of refined sugar to the following countries in the amounts named:

Exported to	Pounds
Great Britain .....	162,109,161
Greece .....	59,688,093
Italy .....	46,822,117
France .....	25,719,696
Netherlands .....	9,108,632
Jugoslavia .....	4,729,120
Turkey in Europe .....	8,083,748
Gibraltar .....	2,524,700
Finland .....	2,426,485
Spain and Canary Islands...	34,534,436
Poland .....	353,664
Russia in Europe .....	348,930
Germany .....	2,143,796
Malta .....	1,099,501
Denmark .....	2,241,321
Other Europe .....	506,918
Mexico .....	15,618,098
Canada .....	4,147,153
Newfoundland .....	4,163,371
Panama .....	1,046,027
British Honduras .....	214,979
Central America .....	112,269
Cuba .....	4,030,890
British West Indies.....	1,279,279
Virgin Islands .....	759,958
Haiti .....	768,795
Santo Domingo .....	1,466,236
Dutch West Indies.....	223,014
Bermuda .....	898,547
Miquelon .....	30,297
Argentina .....	5,612,435
Uruguay .....	11,893,485
Chile .....	266,562
Paraguay .....	500,000
Other South America.....	327,178
Turkey in Asia .....	2,144,227
Other Asia .....	370,499
Philippine Islands .....	1,239,280
Morocco .....	1,003,718
British West Africa .....	399,269
Spanish Africa .....	535,832
French Africa .....	1,052,534
Other Africa .....	294,825
Oceania .....	13,291

Total in Pounds..... 422,852,376  
Total in Long Tons..... 188,773

Before the World War, following which the world's sugar production dropped from 18,000,000 to 15,000,000 long tons, exports of refined sugar

from the United States were very light, but, as the following table shows, they jumped up immediately after the World War began.

Exports of refined sugar from the United States:

Year	Pounds	Tons of 2,240 lbs.
1912 .....	78,677,760	35,124
1913 .....	51,770,880	23,112
1914 .....	390,407,360	174,289
1915 .....	963,576,320	430,168
1916 .....	1,576,650,880	703,862
1917 .....	1,010,735,040	451,221
1918 .....	337,164,800	150,520
1919 .....	1,475,208,000	*658,575
1920 .....	923,986,560	412,494

\*Includes 469,402 tons refined on toll for British Royal Commission on The Sugar Supply.

The largest purchaser of American refined sugar during the war was the United Kingdom, which before 1914 had purchased most of its requirements from Germany and Austria. The war changed the channels of distribution and caused Great Britain to turn to Cuba for raw sugar and to the United States for refined sugar. In the five years ending 1914 the United Kingdom imported 4,457,734 tons of sugar from Germany and Austria-Hungary and 218,483 tons of refined sugar from the United States. In the succeeding five years, while no sugar went from the Central Powers to Great Britain, Cuba sent 2,600,000 tons of raw sugar and the United States 1,300,000 tons of refined sugar.

A comparison of the exports from the United States for the six months ending June 30, 1921, with the six months immediately preceding, shows an increase of 263,206,720 pounds or 117,503 long tons or 165 per cent.

Exports for six months, ending June 30, 1921, 422,852,376 pounds; 188,773 long tons.

Exports for six months ending Dec. 31, 1920, 159,645,656 pounds; 71,270 long tons.

Besides the exports of refined sugar, about 150,080,000 pounds, or 67,000 long tons, of raw sugar have been re-exported from the United States during the first six months of 1921.

Last year the high prices prevailing in the United States attracted sugar from all parts of the world. This year the opposite condition prevails. We are the cheapest market on the globe and the same eyes which turned toward us last year because we were the best market to sell, are now turned toward us because this is the best market in which to buy.

The United States has refining capacity sufficient to refine 1,000,000 tons annually for export without skimping domestic requirements.

### Advertise Swift Employee Stockholders

The fact that more than 21,000 Swift employees own stock in the company is being used for a publicity presentation in newspapers and magazines by Swift & Company. The advertising, which is the beginning of what is to be a regular campaign, carries such statements as—"21,000 partners help make and distribute our products." The company will thus endeavor to convince the customer that his meat products have been handled and made by employees who have a personal interest in its sale, and who therefore will be more cautious and diligent in their work.

## Biscuit Manufacturers Accused As Unfair

### National and Loose-Wiles Companies Cited by Federal Trade Commission

Allegations of unfair competition and price discrimination as contained in complaints just issued by the Federal Trade Commission against the National Biscuit Company, New York City, and Loose-Wiles Biscuit Company, Kansas City, Missouri, both nationally known manufacturers of biscuits, crackers, and other bakery products.

Thirty days are allowed to file answers to the complaints which are issued after preliminary inquiry by the Commission upon petition filed with it.

The gist of the citation is an allegation that these concerns discriminate in price between single retail stores on group orders and chain retail stores to the disadvantage of the single stores.

The complaints recite that the National Biscuit Company and the Loose-Wiles Company both allow discounts on the aggregate monthly orders of their customers, the discounts varying to the amount of the order. Certain discounts are allowed chain stores but similar or as high discounts are refused to the owners of single retail stores who pool their orders.

The complaint sets out that the business of single retail stores is not sufficient to justify the purchase in as large quantities as the chain stores and for that reason the single stores do not secure as great a discount as do the chain stores. To overcome this disadvantage a number of operators of one retail store combined their orders, which were accepted and filled by the firms cited, but were refused discounts based upon the amounts of the combined orders and were only granted discounts based upon the respective amounts or the individual orders. These discounts, which the respondents were willing to grant were, of course, substantially lower than would have been received by the operators of single stores if the discounts had been based upon the aggregate amount of the combined order.

It is averred in the complaint that this system of discounts gives the chain retail store an undue advantage in competing with the operators of but one retail store in the handling of the products of these concerns, and that the practice tends to substantially lessen competition and create a monopoly in the retail distribution of these goods.

### Death of W. H. Lipe

The entire food merchandising trade was shocked by the newspaper announcement of the death of Walter H. Lipe, at Canajoharie, N. Y., on August 21. Mr. Lipe was an outstanding figure among national food merchandisers. He was one of the pioneers who started the Beechnut Packing Company, which from the smallest beginning and from primitive methods became a dominating force in developing its highly competitive line of food products to a national reputation in manufacturing methods of as great distinction as the products themselves.



## Alaska's Successful Reindeer Experiment

### Meat Now Being Shipped to the United States as Result of Growth of Herds.

The announcement that a shipment of 30,000 pounds of Alaskan reindeer meat has just been received at San Francisco calls attention, says the Trade Record issued by the National City Bank of New York, to the remarkable success of our reindeer experiment in Alaska, where the value of the reindeer herds, established a few years ago, is now counted by millions of dollars.

In the early part of our ownership of Alaska, says the bank's statement, the natives were chiefly dependent upon the whale, walrus and seal for their animal food, but with their rapid destruction by the white man the supply of animal food, an absolute essential in that climate, was greatly reduced, and the existence of the natives thus threatened. This condition was brought to the attention of the public in the United States in the early nineties by Dr. Sheldon Jackson, who had been sent to Alaska by the Government to establish schools among the natives, and he conceived the idea of introducing the reindeer, then unknown in Alaska, but proving extremely useful in Siberia and Lapland.

Personal appeals by Dr. Jackson to the public in the United States resulted in contributions of \$2.146, and sixteen head of reindeer from Siberia were landed in Alaska in 1891, followed by about one hundred and fifty in later shipments during the year. Congress then made several small contributions, and by 1900 the total number of reindeer imported into Alaska from Siberia had aggregated about twelve hundred. Importation was then suspended and a colony of "reindeer masters" were brought from Lapland to instruct the Alaskans in the care of twelve hundred animals thus supplied to them.

As a consequence of this establishment of the reindeer industry in Alaska a quarter century ago, the number of reindeer now scattered through that territory is about 140,000 and their value between three and four million dollars.

So liberally are the reindeer herds now supplying the natives, their owners, with meats, milk, butter and cheese, that their owners are now able to spare large quantities for the white population of Alaska and limited quantities for shipment to the Pacific Coast cities and thence to the great trade centers of the country, so that at certain seasons of the year "reindeer steaks" may be had in the markets of the great cities as far east as the Atlantic coast.

The especial value, adds the bank's statement, of this reindeer enterprise in Alaska was found in the fact that it turned into food from a natural growth formerly unutilized, and at the same time encouraged a fixed habitation and a domestication of industry on the part of a population formerly nomadic through its dependence upon the ocean's frontage for its supply of animal food. The reindeer, which thrives upon the

formerly unutilized mosses and lichens of the Arctic "Tundra," which he digs from beneath the snow in winter, serves not only as a food supply but also a draft and pack animal in transporting mails and merchandise, while his skins furnish clothing and shelter for the natives.

The Alaskan reindeer herds, the descendants of the twelve hundred reindeer imported from Siberia a quarter century ago, are not only thriving upon a formerly unutilized domestic product, but supplying meat, milk, butter and cheese to the natives of Alaska and also the white population of "Seward's Ice Box," as Alaska was designated at the time of its purchase from Russia. Alaska has sent us since its purchase nearly a billion dollars worth of precious metals and merchandise, including gold, silver, copper, furs, fish and meats, and taken in exchange nearly a half billion dollars' worth of the product of our farms and factories. The shipments from Alaska to the United States in the fiscal year just ended amounted to over sixty million dollars, and her takings of our domestic products, nearly thirty million dollars. The total value of gold, silver and merchandise sent from Alaska to the United States in the eighteen years since an official record of this movement was established aggregates 805 million dollars, and our shipments to Alaska in the same period, 425 million dollars, making it quite apparent that our total trade with Alaska since its purchase for \$7,200,000 in 1867 has aggregated more than \$1,500,000,000, of which over \$1,000,000,000 was the products of Alaska sent to our own ports, and about \$500,000,000 of merchandise sent for use in that area.

#### A. C. Monagle Goes to Runkel Brothers, Inc.

Runkel Brothers, Inc., manufacturer of cocoa and chocolates, New York, announces the appointment of A. C. Monagle as sales manager, effective August 15. Mr. Monagle for several years has been in charge of the sales department of the Franco-American Food Company and prior to that served as national secretary of the American Specialty Manufacturers' Association. The Runkel Brothers' manufacturing facilities have been largely increased by the completion of an addition to their plant.

#### Employees Receive Insurance Policies

At the fiftieth anniversary of the Fritzsche Brothers, Inc., essential oils, New York, held August 28, Frederick E. Watermeyer, the president, gave each of the employees a life insurance policy based on length of service, beginning with \$500 to those who have recently entered his employ, and advancing \$100 to \$200 annually up to \$5,000 to those who have attained the quarter century mark.

#### Make New Coffee Product

The King Coffee Products Corporation has been organized in Detroit, Mich., to undertake the manufacture of a new soft drink, which will be known as "Coffee Pep, A Man's Drink."

## Dressed Beef Prices Lower in August

### Excessive Supply of Grass-Fed Cattle Developed and Caused Decline

One striking feature of the meat situation during August was the steady decline in the wholesale price of dressed beef. An excessive supply of grass-fed cattle developed during the latter part of the month with the consequence that the supply of the corresponding class of beef was considerably in excess of the demand. As a result both cattle prices and beef prices declined. In fact, during the third and fourth weeks of August, in Eastern markets, the packers could not clear their branch house coolers of the dressed beef on hand even at the reduced prices. The average wholesale price of carcass beef throughout the East dropped to the lowest level reached in the last five years. Fancy beef from choice corn-fed cattle, however, showed no such decline.

The situation in the cattle and beef markets at one time reached such an acute stage that the live stock exchanges cautioned their shippers against flooding the live stock markets with burdensome supplies. Moderate receipts during the last few days of the month brought about a slightly better tone.

Many consumers, both in the East and in the West have turned to the forequarter cuts. Some beef experts attribute this to the season of the year and to the demand from the harvest fields. Others venture the opinion that the public has at last discovered the economy and palatability of forequarter meats.

There was a good trade in dressed lamb and mutton until the last week of the month when an over-supply, exceeding trade requirements, caused some congestion and lower prices for lamb, both alive and dressed. Western range lambs are now running freely, and the price decline toward the end of the month is hardly to be considered unusual for this season of the year.

There was a very large export trade in lard during August. The trade during that month was the largest for any month this year and also the largest during any August for a considerable period. Lard stocks at Chicago decreased by approximately 34,500,000 pounds during the month—the largest August decrease which provision experts are able to recall. Fat backs were in good demand for export and bellies, the bacon cut, were sought in fair volume.

The export trade with Continental Europe showed more strength than that with the United Kingdom. The English demand for both meats and lard slackened considerably.

At one time in August lard declined substantially but rallied again. However, despite the vigorous export trade lard was selling a little lower at the end of the month than at the beginning.

In the domestic trade smoked meats were slightly lower at wholesale than they were at the beginning of August. Hams and shoulders declined more than bacon, but standard breakfast bacon is still selling considerably lower than hams of the same grade.



## National Preservers—Fruit Products Association Membership

The following is the latest list of the active and associate members of the National Preservers and Fruit Products Association.

### Active Members

Acme Packing Company, Green Bay, Wis.  
 American Preserve Company, Third and Lehigh Streets, Philadelphia.  
 Max Ams, Inc., 372 Greenwich Street, New York.  
 Armour & Company, Chicago.  
 Austin, Nichols Company, Inc., Brooklyn.  
 Bliss Syrup & Refining Company, Kansas City, Mo.  
 Cape Cod Preserving Corporation, 148 State Street, Boston.  
 The Causse Mfg. & Imp. Company, Bound Brook, N. J.  
 Chapman & Smith Company, 1017 Washington Boulevard, Chicago.  
 Curtice Brothers Company, Rochester, N. Y.  
 Paul DeLaney Company, Inc., Brockton, N. Y.  
 R. U. Delapenha & Company, Inc., 17 Jay Street, New York.  
 W. H. Dyer & Company, Evansville, Ind.  
 Eatsum Products Company, Orlando, Fla.  
 Ford & Company, Bush Terminal Building, Brooklyn.  
 Gibbs Preserving Company, Baltimore.  
 Glaser, Crandell Company, Western Ave. and 20th Street, Chicago.  
 Gohl Preserve & Pickle Company, 1824 Besley Street, Chicago.  
 Goodwin Preserving Company, Louisville, Ky.  
 Gordon & Dilworth, Inc., 616 West 46th Street, New York.  
 Griggs, Cooper & Company, St. Paul, Minn.  
 Mrs. G. L. Harting, Inc., 4147 Germantown Avenue, Philadelphia.  
 Hills Bros. Company, Beach and Washington Streets, New York.  
 Humbert and Andrews, Inc., 646 Dean Street, Brooklyn.  
 Humboldt Canning Company, Humboldt, Tenn.  
 Johnson-Appleby Company, 218 State Street, Boston.  
 H. A. Johnson Company, 221 State Street, Boston.  
 The Lin-Del Company, Inc., 834 Ellicott Square, Buffalo, N. Y.  
 Logan-Johnson Company, Boston.  
 Lutz & Schramm Company, Pittsburgh.  
 Franklin MacVeagh Company, Lake and Market Streets, Chicago.  
 Joseph Middleby, Jr., Inc., Boston.  
 Middleton Preserving Company, Louisville, Ky.  
 New York Cannery, Inc., Rochester, N. Y.  
 Wm. Numsen & Sons, Baltimore, Md.  
 North Ontario Packing Company, 1721 E. Ninth Street, Los Angeles, Cal.  
 The O'Zell Company, 1201-17 West 15th Street, Chicago.  
 W. B. Pride and Company, Bellingham, Wash.  
 Puyallup & Sumner F. G. C. Association, Puyallup, Wash.  
 Red Wing Company, Inc., Fredonia, N. Y.  
 Rheinstrom Brothers Company, Cincinnati, O.  
 A. Rupert Company, Inc., Portland, Ore.  
 Sethness Company, 718 North Curtis Street, Chicago.  
 John Sexton and Company, Illinois and Kingsbury Streets, Chicago.  
 Henry H. Shufeldt & Company, Peoria, Ill.

J. Hungerford Smith Company, Rochester, N. Y.  
 J. M. Smucker, Orrville, Ohio.  
 Southland Products Company, Houston, Texas.  
 W. N. Spencer Sons Company, 324 East Second Street, Cincinnati, Ohio.  
 Starr Fruit Products Association, 321 Yamhill Street, Portland, Ore.  
 Teekay Company, 15 Park Row, New York.  
 Temtor Corn & Fruit Products Company, Compton Building, St. Louis, Mo.  
 S. J. Van Lill Company, Baltimore, Md.  
 Old Virginia Orchards Company, Front Royal, Va.  
 Welch Grape Juice Company, Westfield, N. Y.  
 Whipple Company, Natick, Mass.  
 Muskogee Wholesale Grocery Company, Muskogee, Okla.

### Associate Members

American Can Company, 120 Broadway, New York.  
 American Metal Cap Company, 2 Summit Street, Brooklyn.  
 American Sugar Refining Company, 117 Wall Street, New York.  
 Anchor Cap & Closure Corporation, 22 Queen Street, Long Island City, N. Y.  
 H. A. Baker, Puyallup, Wash.  
 Closure Service Corporation, 254 Thirty-sixth Street, Brooklyn.  
 Douglas Packing Company, Granite Building, Rochester, N. Y.  
 Duffy-Mott Co., Inc., 502 West Twenty-fifth Street, New York.  
 Elgin Manufacturing Company, Elgin, Ill.  
 Economic Machinery Company, Worcester, Mass.  
 Federal Glass Company, Columbus, Ohio.  
 Gilbert Apple Products Company, Webster, N. Y.  
 Glenwood Canning & Fruit Products Company, Glenwood, Ia.  
 Godchaux Sugars, Inc., New Orleans, La.  
 C. C. Hall, Granite Building, Rochester, N. Y.  
 Hazel-Atlas Glass Company, Wheeling, W. Va.  
 C. L. Jones & Co., 131 State Street, Boston.  
 also 130 No. Wells Street, Chicago.  
 Karl Kiefer Machine Company, Cincinnati, O.  
 Meinrath Brokerage Company, Otis Building, Chicago.  
 Prepared Fruit Company, Orlando, Fla.  
 Provident Chemical Works, 8011 Idaho Avenue, St. Louis.  
 D. B. Scully Syrup Company, Chicago.  
 Schram Glass Mfg. Company, St. Louis.  
 Symes, Eagle & Company, Inc., 326 W. Madison Street, Chicago.  
 Tomato Products Company, Paoli, Ind.  
 Victor Chemical Works, Fisher Building, Chicago.

### Cider Taxable As a Soft Drink

Cider is a soft drink and may be taxable as such by the Department of Internal Revenue, according to a ruling recently handed down in Buffalo, N. Y., by Judge Hazel, of the Federal district court in a decision in the action brought by the Monroe Cider, Vinegar & Fruit Co., of Rochester, against an internal revenue collector.

### Planters' to Have West Coast Factory

The Planters' Nut and Chocolate Company, engaged in the manufacture of peanuts into food products and candy, opens its third plant and eighth distributing center at Davis, Clark and Pacific Streets, San Francisco, Cal., this month.

## Margarin Sells Best When Butter Is Expensive

It has been the experience of every margarin manufacturer that his output was always greatest when the price of butter was at the high point.

This fact prompted a study of the situation with a view of determining how uniform these two factors are and to what extent they move in the same direction.

A chart was prepared comparing the yearly output of margarin in pounds in the United States with Chicago wholesale butter prices as of June 1 each year. This chart showed that over the course of the past twelve years the increases and decreases in margarin production have corresponded very closely to the increases and decreases in butter prices.

The chart showed that the low point in June butter prices during the past twelve years was in 1911, when the price was 21 cents a pound. The high point was in 1920 with 52½ cents the price. These same two years also represent the lowest and highest production of margarin within the past twelve years—121,359,000 pounds and 389,705,000 pounds respectively. The investigators comment as follows:

"The significant point to this situation is this—when butter prices are high, some people as a matter of economy decrease their consumption of butter and use more margarin.

"Inasmuch as butter prices are highest when the supply of butter is limited, it is clear that any product used in place of butter replaces it rather than displaces it; that margarin is a supplement rather than a substitute.

"Judged from these premises it is evident that margarin and butter are not competing commodities according to the usual acceptance of that term. In the business of supplying the public with wholesome fats, one helps the other."

### Coconut Oil Export from Philippines

The total export of coconut oil from the Philippines during the first quarter of 1921 amounted to \$4,854,985, which was \$264,196 more than the export for the same period in 1918, but \$2,816,551 and \$3,562,952 less than the exports for the corresponding periods of 1920 and 1919, respectively. The highest single monthly exportation during the four years mentioned was in January, 1919, when the shipments of oil from the Philippines totaled \$6,098,069, at an invoice value of 30 cents per kilo. The United States and the Netherlands were the only countries that absorbed the exports for the first quarter of 1921, while in previous years Great Britain, Spain, and France shared a good portion of the Philippine output. Of the total export for this period \$3,190,407, or approximately 66 per cent, went to the United States; \$1,661,668, or about 34 per cent, to the Netherlands; and \$2,910, or less than 1 per cent, to all other countries.

The copra exported for the first quarter of 1921 was valued at \$1,912,133. That the copra trade is becoming active is shown by the fact that for the first quarter of 1920 the total export was \$10,148 only. In 1918 and 1919 the total exports of copra for the first quarters were \$122,219, and \$3,036,871, respectively, states the bulletin of the Philippine Government Commercial Agency.



## British Grain and Flour Imports Decrease

### First Six Months of 1921 Show a Great Loss as Compared with Corresponding Period in 1920

During the first six months of 1921 the value of grain and flour imported into the United Kingdom decreased below that for the corresponding period of 1920 by nearly as much as it exceeded the aggregate in 1913. During 1913, 101,449,443 hundredweight were received, valued at £40,240,813; in 1920 the quantity declined to 82,207,111 hundredweight, while the value rose to £94,107,544, and in the current year 75,593,976 hundredweight represented £67,715,537.

Contrasted with the pre-war period all grains and flour were less in quantity, with the exception of rice, beans, wheat meal and flour, maize products and malt, as against 1920 there were decreases in wheat, maize, maize products, and farinaceous substances included under the main classification, but not enumerated.

#### Wheat Imports Decrease—Barley and Oats

Wheat imports aggregated 51,677,421 hundredweight (value, £21,803,252, or about 8s. 5d. per unit) in 1913, decreasing to 48,288,500 hundredweight (value, £54,544,723, or £1 3s. per unit) in 1920, and to 36,779,600 hundredweight (value, £36,368,803, or rather less than £1 per unit) in 1921. The main imports were from the United States in 1913 and 1921. Last year Argentina sent a larger aggregate than any other country in any of the three periods under review, whereas in 1921 such imports were only one-eighth the quantity received therefrom in 1920. Australia's contribution in the current year was approximately double that of the pre-war period but about 27 per cent lower than a year ago. Receipts from these countries varied as follows in 1913, 1920 and 1921, respectively: United States—16,673,875 hundredweight, 11,851,100 hundredweight, and 16,988,800 hundredweight; Argentina—13,027,000 hundredweight, 19,509,300 hundredweight and 2,423,100 hundredweight; Australia—4,895,046 hundredweight, 13,250,400 hundredweight, and 9,655,900 hundredweight. From Canada wheat imports have declined to less than half the pre-war volume.

Imports of barley aggregated 8,069,100 hundredweight (£3,174,088, or about 8s. per unit) in 1913, 4,188,000 hundredweight (£5,062,115, or £1 4s. 2d. per unit) in 1920, and 5,103,392 hundredweight (£4,368,549, or a fraction over 17s. 1d. per unit) in the current period, supplies from the United States far exceeding those from any other source and totaling 3,723,800 hundredweight, 2,339,500 hundredweight, and 3,342,300 hundredweight in 1913, 1920, and 1921, respectively.

Oats diminished from 10,628,000 hundredweight (£3,380,204, or 6s. 4.5d. per unit) to 2,517,200 hundredweight (£2,378,693, or about 18s. 11d. per unit) in the two earlier years, and advanced in the current year to 4,383,44 hundredweight (£2,398,509, or substantially 11s. per unit). Of this description of grain Argentina is and has been in each of the three periods the principal source.

#### Fluctuations in Maize Imports—Rice Purchases

The details of maize imports respecting chief countries of origin, record considerable fluctuations. Out of the ag-

gregate of 18,987,584 hundredweight (£5,417,629, or 5s. 2d. per unit) received in the pre-war period, 10,979,048 and 6,819,600 hundredweight came from Argentina and the United States, respectively; in 1920 the aggregate reached 16,143,100 hundredweight (£13,405,244, or 16s. 7d. per unit), Argentina's contribution totaling 14,643,300 hundredweight; while in 1921, of 15,202,023 hundredweight (£8,624,006, or 11s. 4d. per unit), 5,309,000 came from the United States, 4,224,500 hundredweight from Argentina, 2,504,100 from Rumania, and 2,681,623 hundredweight from unenumerated countries.

Rice imports were derived in greatest proportion from the British East Indies, whence came 1,463,999 out of the aggregate of 2,337,218 hundredweight (£1,257,883) in 1913, 1,474,600 out of 1,683,760 hundredweight (£3,654,273) in 1920, and 2,274,540 out of 3,033,118 hundredweight (£2,770,404) in 1921.

Wheat meal and flour aggregated 5,837,416 hundredweight (£3,082,297, or 10s. 7d. per unit) in the pre-war period, and fell to 5,222,118 hundredweight (£9,087,818, or nearly £1 15s. per unit) in 1920, but rose in the current year to 7,046,592 hundredweight (£9,324,588, or about £1 6s. 6d. per unit). The chief sources and the quantities received therefrom in 1913, 1920, and 1921 were: United States—3,043,213 hundredweight, 3,494,400 hundredweight, and 3,232,987 hundredweight; Canada—1,990,982 hundredweight, 878,200 hundredweight, and 2,786,705 hundredweight.

Oat products declined from 535,202 hundredweight in 1913 to 365,152 hundredweight in 1921, the latter representing an increase of about 54,000 hundredweight over a year ago; while values rose from £354,928 to £633,692 and declined to £584,350 in 1921. Maize products increased from 278,935 hundredweight (£103,434) to 1,230,268 hundredweight (£1,385,011) in 1920, and fell in 1921 to 901,420 hundredweight (£638,270).

Malt imports in the current year were nearly ten times as large as in 1913 and nearly thirty times as high value, while "all other farinaceous substances" in 1921, declined by well over 50 per cent in quantity contrasted with 1913, whereas the value fell by only 20 per cent.

#### Japanese Tea Exports to U. S. Decrease

Figures given in the Japan Chronicle show that in 1918 there were 50,000 tons of teas exported from Japan to America, whereas the amount exported in 1919 decreased to 30,000 tons and in 1920 to only 23,000 tons. This decrease is attributed to the fact that low-priced Indian and Java teas have taken the place of Japanese tea on the market in America, and in addition there has been some difficulty in the disposal of old stocks. Under these circumstances no orders have been received from America and exports are delayed. It is considered likely that the 1921 exports may decrease further by 30 or 40 per cent unless recourse is had to the drastic measure of either destroying or returning to Japan old stocks still in existence.

#### New California Apple Law

Although the new California Standard Apple Act, which went into effect Aug. 3, contains a number of changes it is still very similar to the existing law. The principal changes in the requirements of the "California Fancy" grade are that the tolerance of defect for apples within a given container has been increased from 3 to 5 per cent. The tolerance of total defects of all kinds remains at 10 per cent. This increase was considered necessary, as a 3 per cent tolerance was hardly sufficient for practical purposes, and could not be rigidly enforced. It is the intention of the Standardization Service of the State Department of Agriculture to strictly enforce this 5 per cent limit on tolerance.

Another important change in the requirements of the "California Fancy" grade is the removal of the 2¼ inches minimum diameter, on apples packed in this grade. Under the new act, any apple, no matter how small, if meeting all other grade requirements may be packed as "California Fancy." The requirements as to uniformity in size within the same container as described below must of course be complied with in addition.

Instead of requiring that stems be retained in all apples packed in "California Fancy" grade, with the exception of Gravensteins, the much simpler requirement that no apples with skin broken at stem may be packed in this grade has been substituted.

In the "B Grade" the most important change is the permit to pack apples showing scab-spots not larger than one-quarter of one inch in diameter in the aggregate. This conforms quite closely to the apple standards of the Northwestern states in this respect. The tolerance of defects has been increased from 3 to 5 per cent as in the "California Fancy" grade.

The same change regarding scab spots and tolerance of defects has been made in the "C Grade" as in "B Grade."

Under the new act a close check will be made to note that tier markings correspond to these sizes as prescribed under Section 3, sub-section b of the law. Apples not meeting size requirements as labeled will be considered packed in violation of the statute, and apples smaller than the size indicated by tier markings will be considered as defective apples and below the tolerances prescribed for defects.

It should be noted that apples infested with insect pests (wormy apples) can only be sold for the express and sole purpose of manufacturing the same into apple by-products, although the grower may sell such wormy or diseased apples as part of his crop in bulk to a packer or may himself manufacture such wormy or diseased apples into apple by-products, such as cider, vinegar, dried apples, etc. It should also be noted that it is unlawful to import any infected or infested apples from outside the state of California for any purpose whatsoever.

A new provision of the law specifies that "on each container of apples which has been held in cold storage for more than fifteen days after being packed a statement showing the fact that the contents have been held in storage" must appear.



## Recent Patents

The following patents of interest to readers of The American Food Journal recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney Continental Trust Building Washington, D. C., at the rate of 20 cents each. State number of patent and name of inventor when ordering.

1,380,427. Manufacture of a food preparation from fresh blood. Friedrich Sgalitzer, Vienna, Austria.

1,380,489. Method of producing food-stuffs. Wharton B. McLaughlin, New York.

1,380,777. Food fat and process of finishing the same. John T. Cox, Berlin, N. H., assignor to Brown Company, same place.

1,380,815. Food product. Sigmund Luft, Maywood, Ill.

1,380,859. Process of removing shells from cocoanuts. Franklin Baker, Jr., Philadelphia, Pa., and Simon Cooper, New York, N. Y., assignor to Franklin Baker Company, Philadelphia, Pa.

1,381,082. Method and apparatus for blanching peanuts. George J. Corporation, Amesbury, Mass.

1,381,347. Processing-machine for fruits and vegetables. William F. Schaller, San Francisco, Cal.

1,381,421. Means of depositing dough. Ernest E. Lindsey, San Francisco, Cal.

1,381,468. Composition of edible fats. John H. Jones, Bound Brook, N. J.

1,381,469. Process of treating oils and fats. John H. Jones, Bound Brook, N. J.

1,381,510. Vegetable-washer. Ogden S. Sells, Buffalo, N. Y., assignor to Peerless Husker Company, same place.

1,381,526. Food product. John F. Waters, Chicago.

1,381,564. Edible fatty product from fixed oils and fats and process of manufacturing same. Emanuel Klein, New York.

1,381,613. Grape-juice sirup and process of treating the same. Sam Avis, Chicago.

1,381,694. Process for the maturing of chocolate and the like. George A. Bausman, Springfield, Mass., assignor to National Equipment Company, same place.

1,381,705. Separation of oleo and stearin from fats. Cyrus H. Hapgood, Nutley, N. J., assignor to De Laval Separator Company, New York.

1,381,706. Process of separating oils from fats. Cyrus H. Hapgood, Nutley, N. J., assignor to De Laval Separator Company, New York.

1,381,821. Dry coffee compound. Joseph Greenberg, Philadelphia.

1,381,822. Prepared dry coffee-substitute compound. Joseph Greenberg, Philadelphia.

1,381,833. Preserved malt preparation. Bruno H. Hoehl, Wheeling, W. Va.

1,381,858. Food product. Jesse D. Bourdeau, Detroit, Mich., and William B. Fink, Washington, D. C., assignors to Quaker Oats Company, Chicago.

1,382,038. Food product and process of manufacture. Vernon A. White, Chicago.

1,382,148. Continuous cooker for foods in containers. Selah E. Walker, Portland, Ore.

1,382,203. Combined cake and filler feeder. Gustave A. Meier, Norwood, and Claude J. Wicher, Cincinnati, Ohio, as-

signors to George H. Streitmann's Sons Co., Cincinnati, Ohio.

1,382,673. Process for the production of meat powder. William F. Remus, Rangataua, and Alexander E. Macredie and Charles F. Cork, Auckland, New Zealand.

1,382,850. Apparatus for bleaching almonds. George W. Pierce, Davis, Cal., assignor to California Almond Growers' Exchange, San Francisco, Cal.

1,382,695. Cereal food and process or making same. Carleton Ellis, Montclair, N. J.

1,383,290. Process of producing confections. John A. Cressey, Dallas, Tex.

1,383,681. Confectionery-making machine. William V. Wallburg, Melrose, Mass.

1,384,050. Sausage-linking machine. Herman Cramer, Pine Lawn, Mo.

1,384,318. Process of making butter. Wilfrid P. Heath, Chicago.

1,384,319. Process of manufacturing candy. Wilfrid P. Heath, Chicago.

1,384,350. Machine for making macaroni and noodles. Stefan Santilli, Canton, Ohio.

1,384,379. Process of peeling tomatoes. William D. Bost and Harry M. Miller, Los Angeles, Cal., said Bost assignor to said Miller.

1,384,494. Raisin-cleaner. William Stoner, Fresno, Cal.

1,384,601. Nozzle for cake-coating machines. William Costell, Jr., Philadelphia.

1,384,680. Manufacturing flavoring extracts with higher alcohols. Bernard H. Smith, Brooklyn, and John R. Eoff, Jr., New York, assignor to Garrett & Co.

1,384,681. Manufacturing flavoring extracts with glycols. Bernard H. Smith, Brooklyn, and John R. Eoff, Jr., New York, assignors to Garrett & Co.

1,384,692. Addition compound for coffee. Nathaniel C. Emtage, New Orleans, La.

1,384,921. Machine for forming and wrapping small packages of butter. William O. Rew, Eureka, Cal.

1,385,218. Fruitsizing machine. Allen H. McIntyre, Dunedin, Fla., assignor to Skinner Machinery Co., same place.

1,385,246. Food product and process of preparing same. Ralph W. Crocker, Chicago.

1,385,352. Process of preparing malted food products. John W. Allen, South Omaha, Neb.

1,385,462. Candy and chocolate machine. Sylvester S. Marvin, Bryn Mawr and William Munz, Philadelphia, Pa., assignors to Pennsylvania Chocolate Co., Pittsburgh.

1,385,503. Food product. Sherwood P. Snyder, Dayton, Ohio.

1,386,842. Process of bread-making. Curtis J. Patterson, Kansas City, Mo., assignor to Campbell Baking Co., same place.

1,386,359. Method of making dry yeast. William B. D. Penniman, Baltimore, Md., assignor to Whitney Yeast Corporation, Boston.

1,386,360. Method of making dry yeast. William B. D. Penniman, Baltimore, Md., assignor to Whitney Yeast Corporation, Boston.

1,386,361. Method of making dry yeast. William B. D. Penniman, Baltimore, Md., assignor to Whitney Yeast Corporation, Boston.

1,386,549. Fruit-grader. Orin N. Boyer, Long Beach, Cal.

## Colombia Offers Increasing Market for Wheat Flour

Colombia, as a market for wheat and wheat flour, is steadily increasing its demands for the products from the United States, says a consular report. In 1918 the value of the wheat flour imported from the United States was \$289. It rose to \$309,639 in 1919 and to \$610,191 in 1920. The flour is brought to Cartagena packed in 25-pound bags, five or which are usually placed in a strong burlap bag. It is also brought in 98-pound cotton bags inclosed in burlap. The 140-pound jute bags are not generally used. The import duty on wheat flour is \$0.08 per kilo (2.2046 pounds). There are additional surtaxes of 2 per cent and 5 per cent. The duty on wheat is \$0.03 per kilo, with additional surtaxes of 2 and 5 per cent.

American flour is sold in packages of 25 pounds at \$3 retail. The native flour is sold at \$15 for 125 pounds wholesale. Colombian wheat, which comes from the plains around Bogota, is a good variety of wheat, but it is dark in color. Because of the lack of transportation, it is very expensive to bring this wheat to the coast. This cost makes it practically impossible for the native wheat to compete with the imported American product.

Flour is used principally for the making of bread. There are perhaps 10 bakeries in Cartagena, and each village of any importance in the Department has one or more small bakeries. The use of the tortilla, or corn-meal cake, while at present very general, especially among the poorer people, is giving way to a certain extent to the bread made from wheat flour. The making of biscuits is so limited at present that it does not materially affect the quantity of flour used. Another important use of flour is for macaroni or noodles; this ranks next to bread making in the quantity of flour consumed. With the increase of the foreign population, especially American and British, there will be a greater demand for flour.

## Naples Tomato Products Exports Increase

In 1920 the export trade in tomato products through the port of Naples almost equaled the total for all Italy for the pre-war year of 1913. In 1913 the exports from the country totaled 20.73 300 kilos while during 1920, 19,394,403 kilos were shipped from the port of Naples alone. Of this total, 2,111,514 kilos went to the United States and a large proportion of the remainder in England. The value of the 1920 exports to the United States reached \$855,000, while the shipments in 1921 will probably equal those of last year, \$304,800 worth having been exported during the first five months.

The shipments so far made are from the stocks on hand from last season's crop, the new crop not yet being harvested. Two large canning factories are in operation near Naples, both of which import tinplate and manufacture their own cans with modern American machinery. A representatives of these firms has recently been in the United States to purchase additional machinery. The product is prepared in two forms—peeled tomatoes and tomato sauce. Both are packed in 1-kilo and half kilo round tin cans, under a vacuum and heat.



# Foreign Market for American Lard

## Exports in Last Few Years Have Represented About 50 Per Cent of Production

(Prepared by the Foodstuffs Division Bureau of Foreign and Domestic Commerce.)

For the past few years the exports of lard (exclusive of neutral lard) from the United States have represented some 50 per cent of the total factory production, while the exports of lard compound have represented approximately 4 to 5 per cent. Of lard, Europe takes on an average 90 per cent of the exports, and before the war the United Kingdom and Germany were the principal European markets, each being of about equal importance to the lard-producing trade. For the first six months of 1921, Europe received 81.43 per cent of the exports of American lard, the West Indies 9.78 per cent, and North America 6.12 per cent.

The United Kingdom and Cuba were the principal foreign markets for American lard compound in the pre-war year 1913, while in 1919 Belgium also was an important buyer. In 1920 the West Indies purchased 34.66 per cent of the total shipments of American lard compound and Europe 24.66 per cent. For the first six months of 1921 Mexico and the West Indies received 47.80 per cent of the exports and Europe 29.71 per cent.

During the pre-war year of 1913 sales of American lard (except neutral lard, which is not included in this review) to Europe amounted to 437,786,857 pounds, while the total exports were 536,179,645 pounds. Exports to Europe in 1918 had grown to 464,394,299 pounds (an increase over 1913 of 6.08 per cent) as compared with total exports of 548,817,901 pounds (an increase over 1913 of 2.36 per cent). While the percentage of exports to Europe during 1919 was the same as in 1918, the quantity shipped increased to 673,455,046 pounds out of total foreign sales of 760,901,611 pounds. Due probably to the difficulties of financing shipments and to business depression during the latter part of the year, exports in 1920 fell 148,651,660 pounds as compared with 1919, a drop of 19.52 per cent; the aggregate was, however, still 14 per cent above the exports of 1913. During the first six months of 1921 exports amounted to approximately 69 per cent of the total for the complete year 1920.

In 1919 the American exports of lard to Germany formed 5.19 per cent of the total, while the exports to the United Kingdom constituted 28.82 per cent. In 1920, Germany's share of the total was 20.88 per cent and the United Kingdom's 21.03 per cent. For the first six months of 1921 shipments to Germany exceeded those to the United Kingdom, 123,508,503 pounds going to Germany and 112,995,014 pounds to the United Kingdom, or 29.4 per cent and 26.89 per cent, respectively, of the total exports.

The 688 establishments operating in the American wholesale slaughtering and meat-packing trade in 1919 produced commodities valued at \$4,246,290,000, compared with an output valued at \$1,651,965,000 for 1914, an advance of 157.04 per cent. Of the value in 1919, lard represented \$415,817,000, or 9.79 per cent of the aggregate, compared with \$120,414,000 for 1914, or 7.29 per cent of the total for that year. Comparing the values of lard production for the two years,

there was an increase in 1919 over 1914 of 245.32 per cent. Of the firms operating in this industry, 550 are reported as producing lard—approximately 80 per cent of the total number.

The manufacture of neutral lard is a specialized industry, neutral lard being made from the finest grades of leaf fat by cooking in a manner somewhat similar to the kettle-rendered product, but at lower temperatures. It retains very little of the hog flavor. Its use is almost exclusively confined to the margarin trade, and for this reason neutral lard, as before stated, is not included in this review.

Data on the production of factory lard in the pre-war year of 1913 are not available, and the output has therefore been estimated from figures given in Department of Agriculture Bulletin No. 769 for 1912 and 1914; on this basis a production of 807,512,000 pounds was arrived at. By 1918 the amount had increased to 1,008,757,000 pounds, a gain of 24.92 per cent, and advanced in 1919 to 1,084,035,935 pounds, 7.46 per cent more than in 1918. In 1920, 1,257,458,481 pounds of lard were made—a quantity 16 per cent greater than in 1919. For the first six months of 1921 an output of 787,743,739 pounds, or 62.65 per cent of the total for the complete year 1920, was reported.

### Lard Compound

When speaking of lard compound, lard substitute, or other fabricated fat sold in the markets of the world under various trade-marks, one is inclined to think of a composition of animal fats to be used in place of lard. Contrary to the popular belief, lard compound or lard substitute is made, chiefly, not of animal fats but of vegetable oils. During the last year for which production figures are available there were approximately 100 firms making lard compound in the United States, and their reported consumption of fats in its manufacture ranged as follows: Vegetable oils, 93 per cent, of which cottonseed oil comprised 83 per cent and soya bean, peanut, and coconut oil the remainder; animal fats, 7 per cent, of which stearin comprised 63.5 per cent, tallow and lard being the other principal animal fats.

While not of such importance as lard as an export factor, lard-compound production in the United States is about on a par with that of lard, there being approximately 1,000,000,000 pounds produced each year. Of this amount 4 to 5 per cent are exported each year. In 1913 the exports to Europe amounted to 24,166,585 pounds, as compared with total exports of 63,699,754 pounds. The total in 1918 had dropped to 43,977,410 pounds, a decrease from 1913 of 30.96 per cent, while the share of Europe this year was 22.52 per cent less than in the pre-war year. Exports in 1919 were larger than in any previous year—124,962,950 pounds, an increase over 1918 of 184.15 per cent, while the exports to Europe this year increased 375.17 per cent. The business depression throughout the world was reflected in the exports of 1920, when there was a reduction of 74.34 per cent

from the aggregate in 1919 and a corresponding drop in exports to Europe of 91.11 per cent. Compared with 1913, the exports to Europe in 1920 were less by 67.29 per cent and the total exports were less by 49.72 per cent. In 1921 the exports began to rise, and during the first six months amounted to 83.98 per cent of the total exports during the complete year 1920. Of the exports, in January-June of 1921, Mexico and the West Indies took 47.8 per cent and Europe 29.7 per cent.

### More Confident Tone Features Condensed and Evaporated Milk Markets

Markets for condensed and evaporated milk seem to have taken on a little more confident tone the past month. Conditions are still far from what manufacturers generally consider satisfactory, and here and there are individual firms who report no improvement, but the general feeling is apparently better, temporarily at least. Statistical reports received from manufacturers bear evidence of the fact that the situation has improved somewhat and that there has apparently been a healthier movement of most classes of goods.

The latest figures as to total stocks in manufacturers' hands cover August 1, and reveal but a slight decrease under July 1. On July 1, however, the comparison with the previous month showed an increase in stocks on hand of about 25 per cent. The later figures are therefore more favorable from the manufacturer's standpoint, although they are partly due to a decreased production and not entirely to a more active movement of goods into trade channels. It will be noted, that on a comparative basis unsold stocks of all classes reported August 1 were 114,000,000 pounds, as compared with 174,000,000 pounds on July 1, or a decrease of 60,000,000 pounds and that unfilled orders increased from 2,800,000 pounds to 9,100,000 pounds. The movement was most active on evaporated case goods. July reports of evaporated milk exceeded 11,600,000 pounds, over half of which went to the United Kingdom and to Poland. Shipments to Germany dropped materially, but France and Belgium received over 1,200,000 pounds. Exports of condensed milk were some 2,000,000 pounds less than the previous month, and of the total amount approximately 5,700,000 pounds, Poland with 832,000 pounds, the United Kingdom with 606,000 pounds, and Cuba with over 2,000,000 pounds, were the largest receivers. This total also included some 366,000 pounds of condensed milk exported to Japan.

August prices paid producers for raw milk were higher in all sections, the average increase amounting to 28 cents per hundredweight. Greatest increases occurred in the Northeastern sections, where it is reported that condenseries are accepting increasing amounts of milk. This is said to be responsible to some extent for a lighter production of cheese in those districts.

Manufacturers' selling prices as reported for July show that the greatest changes occurred in foreign prices. Condensed case goods were increased an average of 18 cents but evaporated goods were reduced 16 cents per case. Similar changes were made in domestic prices except for the amounts which averaged only 5 to 6 cents per case.



## Growth of Meat Industry in Southern Brazil

Official statistics indicate that the beef industry in Rio Grande Do Sul, the southernmost state of Brazil is keeping pace with the steady increase of the cattle industry. The preparation of jerked beef has been carried on there since 1798, each year increasing in amount.

The greater part of all beef slaughtered in the State is made into jerked beef, which is shipped to the northern States of Brazil, Cuba, and other Latin American countries. The following official figures showing amounts of jerked beef produced during 1909-1919 will indicate the importance of this industry.

	Metric tons
1909 .....	58,870
1910 .....	67,359
1911 .....	72,785
1912 .....	80,426
1913 .....	69,575
1914 .....	51,089
1915 .....	48,351
1916 .....	45,796
1917 .....	55,625
1918 .....	48,029

The amount and value (in United States currency) of jerked beef exported from Rio Grande do Sul during 1913 and during the last two years for which official statistics are available follow: 1913, 64,064 metric tons, valued at \$7,885,048; 1918, 31,324 tons, valued at \$7,332,478; 1919, 35,374 tons, valued at \$11,782,530.

The foregoing figures cover only the jerked-beef industry, and the following official statistics indicate the amount and value of canned beef exported from the State during the same period: 1913, 451 metric tons, valued at \$99,658; 1918, 12,112 tons, valued at \$5,159,483; 1919, 16,710 tons, valued at \$4,242,380.

The marked decline in the amount of jerked beef produced during 1918-19 is accounted for by the marked increase shown in the exportation of canned beef for those years. During nearly all the war period large contracts were running for canned beef for direct shipment to Europe. Since the close of 1919 there has been a heavy decrease in canning and a return to the normal production of jerked beef.

## Italian Biscuit Industry Menaced

Italian biscuit manufacturers assert that their industry is in a precarious position at present and that if the same conditions continue for a long time, it will virtually mean that factories will close their doors.

The reasons assigned for these statements are that Italian biscuit manufacturers must buy flour of one type and from one supplier, whereas foreign manufacturers may purchase their flour in the open market and may choose the types best adapted for their work. The Italian manufacturers must also pay a superprice to the commissariat for food control in favor of the political price for bread. It is asserted that at present Italian manufacturers pay 405 lire per quintal (1 quintal=220.46 pounds) for flour, while foreign manufacturers pay only 175 lire per quintal and have various types of flour to choose from. Under these conditions it would seem to be more profitable to manufacture biscuits abroad and import them into Italy, avoiding the payment of the superprice in favor of the political price of bread,

which is paid when the product is manufactured in Italy. This fact had produced a great contraction in production. The decree granting full liberty to manufacture cakes and sweets is said to have considerably damaged the biscuit industry, as the price for flour for cakes and that for biscuits is the same. Before the war cakes cost about three times as much as biscuits, while now they cost only 30 per cent more, and, the difference in price being so small, preference is given to the cakes.

The importance of the chocolate and biscuit industry in Italy has greatly increased, both as regards the building of new establishments and the quality of the products, which has reached such excellence as to bear favorable comparison with the best foreign makes. The capital now invested in this industry is more than ten times greater than it was before the war, and the number of workers employed, which before the war was 10,000, is at present 50,000. There are projects for new companies and enlargements of the present establishments.

According to the Italian customhouse statistics for 1920, the value of the imports of cocoa and chocolate was 52,601,160 lire, and the value of the exports was 11,382,603 lire. The exports consisted almost entirely (10,895,500 lire) of manufactured chocolate. The value of the cocoa imported was 40,599,060 lire and that of the manufactured chocolate 12,002,100 lire.

## Decline in Prices of Dried Peaches

In conformity with the resolution passed by the National Association of Retail Grocers at the 1921 convention requesting the producers of the country to co-operate with the members in giving publicity to comparative prices, the California Peach and Fig Growers has issued a comparative table showing the decline in peach prices the past year.

The table shows that dried peach prices have been nearly cut in half since the opening prices were issued a year ago. Prices on the differential in package goods were more than cut in half.

An interesting comparison is offered by the California Peach and Fig Growers in a table of prices issued in 1870 showing the prices of dried peaches on the Atlantic seaboard. Although the general opinion is that the fruit prices have been materially increased in late years, this table shows that dried peach prices are at a lower level in many cases for the current year than was the case fifty years ago.

In 1869 dried peach prices were at a very high figure and according to the table were slashed in half during the season of 1870. During the latter year in Virginia, which was supposed to be the center of the dried peach market, prices were quoted as follows:

	Peeled	Unpeeled
	per lb.	per lb.
At Richmond .....	.13 to .15	.07 to .09
At Norfolk .....	.15 to .17	.10 to .12
At Lynchburg .....	.12 to .14	.08 to .10
At Alexandria .....	.13 to .15	.10 to .12

The comparative table issued by the California Peach and Fig Growers gives the prices as follows:

	1920	1921
	Yel-lows	Yel-Muir's
Standard .....	.15½	.08
Fancy .....	.17½	.09½
Extra Fancy .....	.18½	.10½
Slabs .....	.15¼	.07¼

## Canned Ravioli Made Successfully in California

Several years ago a few firms in the Italian quarter of San Francisco began to make ravioli on a commercial scale for general distribution. But there was one drawback: ravioli so prepared would not keep more than a few days. People hesitated to buy something that would so easily spoil.

A few years ago a process was perfected for canning ravioli, so that it could be kept indefinitely like any other canned product and used whenever needed at a few minutes' notice.

This discovery at once solved the problem of the general use of this Italian culinary masterpiece.

One of the pioneers in canning ravioli was the R. J. Workman Company, which has probably made the greatest success at this business of any packing house in California. This firm has control of the largest market because it has specialized in canning ravioli. R. J. Workman has been engaged in one way or another for some eighteen years in the preparation and packing of food products such as tamales, chili con carne and sauces.

Two of the sealing can machines turn out fifty cans a minute, or some 36,000 a day. All the machinery is operated by steam power and the product passes automatically from one operation to another without being touched by human hands.

Of all the known dishes ravioli is the most complicated in its ingredients and takes the longest time to make. When made in the home on a small scale, almost the entire day is spent in the process. It is made under the most sanitary conditions, with a rigid United States Government inspection of every operation, so that inferior materials cannot be used.

First is made the dough, composed of the finest grade of flour. If any but the best grade of flour be used, the dough will not hold together when rolled out, and the ravioli will be spoiled, leaking through its covering.

Next is made the filling, consisting of chicken, meats, spinach and other ingredients. The filler is then placed on the dough and covered with another layer of dough. This is submitted to a slight pressure and then gently rolled and cut by the millions into those small squares making the main body of the ravioli.

Finally the sauce is made. Everything depends upon the sauce which gives the distinctive flavors to the ravioli. The R. J. Workman sauce is made in 200 gallon copper kettles, according to an original formula, with tomatoes and mushrooms, spices, and is cooked for two hours in a way that it is impossible to do in the home.

The ravioli is then placed in the cans. The sauce is poured over the ravioli, and the cans hermetically sealed by machinery. These cans are then placed in huge retorts and submitted for half an hour to heat at 240 degrees Fahrenheit. After this they are taken out, labeled, when they are ready for shipment all over the world.

F. Hansen has recently resigned from the C. F. Mueller Company, with whom he had been connected for 14 years, to become general manager of the Warner Macaroni Company, Inc., Syracuse, N. Y.



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# The American Food Journal

The National Magazine of the Food Trades



## In This Issue

Making the Olive Palatable

By William V. Cruess

Scientists on Watch for New Corn Products

By E. W. Hellwig

Consumers Favor Flour Put Up in Small Cartons

By William M. Rose

Annual Convention of American Dietitians

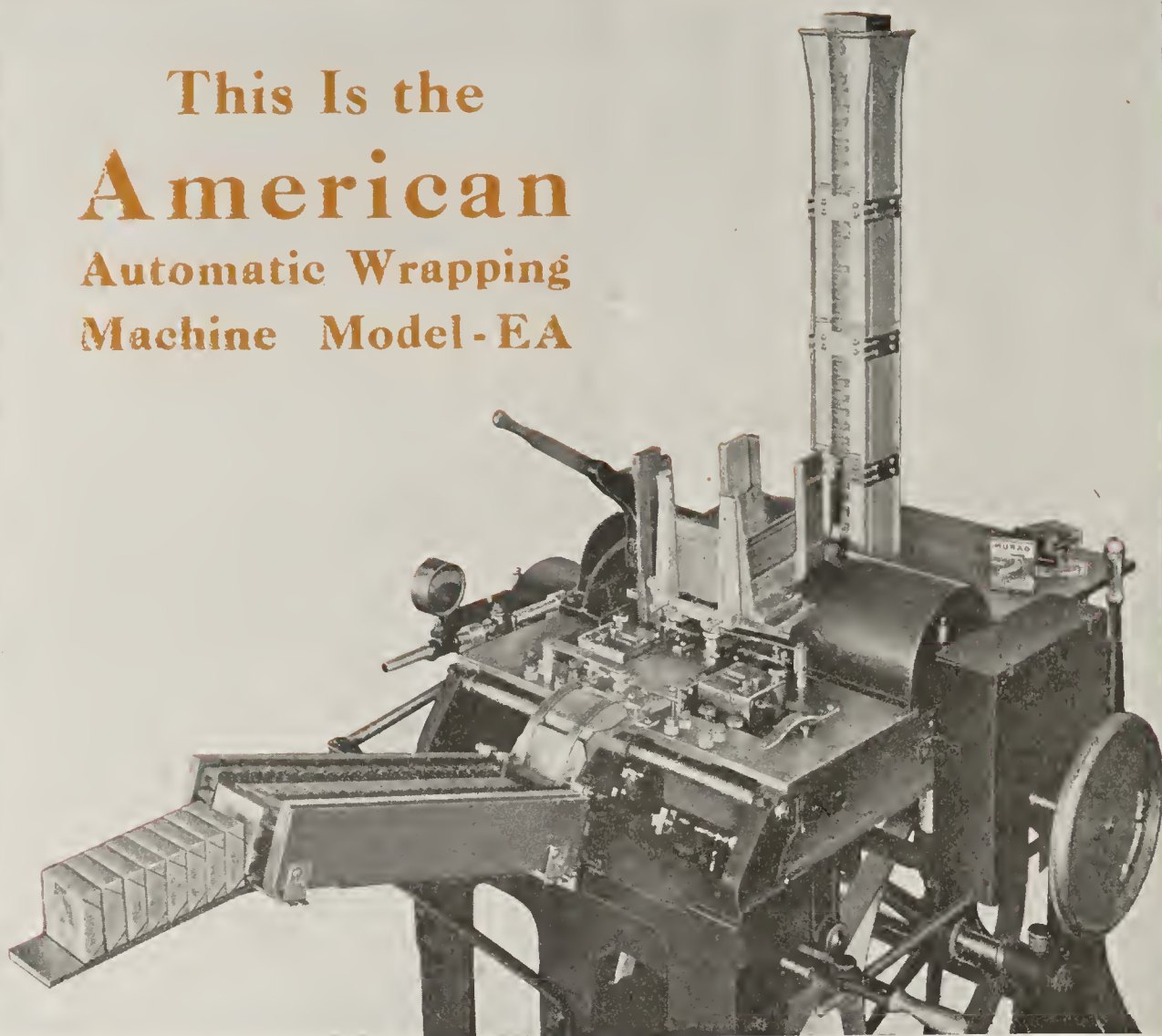
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Food News From Washington

News of the Food Trades



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# The American Food Journal

The National Magazine of the Food Trades

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## The Editor's Column

An example of the type of progressive journalism and professional service THE AMERICAN FOOD JOURNAL stands for, is instanced in the features to be published during the next few months of special interest to dietitians, heads of home economics departments, and nutrition experts generally throughout the country. The following are only a few of the things that will be features in addition to our regular departments and articles of interest to the entire food field:

1. Nationwide symposiums on such questions as the best method to prepare coffee.
2. Department of questions and answers on problems of nutrition and diet.
3. Abstracts of the best current literature on subjects pertaining to foods.
4. Technical articles by leading experts on newest discoveries in milk bacteriology, dehydration of food products, various nutritional and diet problems, etc.
5. A careful account of the American Dietetic Association convention, written by honorary president.
6. Research information service bringing to our readers the unparalleled research and academic resources of the city of New York.
7. Special articles, researches, symposiums, etc., on vital topics prepared and published at the suggestion of the readers themselves.

As a matter of fact, we have only just begun to make this paper serve the dietitians along the advanced lines we have had in mind; and already the many unsolicited testimonials coming in to us show incontrovertibly how surely we are hitting our mark.

The dietitian of one of New York's leading hospitals writes: "THE AMERICAN FOOD JOURNAL is performing a truly valuable and unique service." The dietitian of the industrial relations department of the largest rubber company in the world informs us that she has found it "not only very interesting, but very valuable, too."

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# The American Food Journal

The National Magazine of the Food Trades

Vol. XVI

OCTOBER, 1921

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No. 10

## Making the Olive Palatable

### Long Advance from Salty, Untasty Fruit of the Days of Herodotus and Greeks to Delicious, Ripe Product of California Growers

**Editor's Note.**—Dr. W. V. Cruess has been prominent during the past five years in original investigations in the various factors involved in the pickling of ripe olives. His studies have embraced the functions of lye in pickling, the chemical character of the bitter principle of the olive, the effect of various tins, and bacteriological fermentation. At the present time he is in charge of the Fruit Products Laboratory at Berkeley, an institution devoted to the study of fruit products principally from the standpoint of developing new products and improving old ones. On page 10 of this issue of The American Food Journal, the results of his studies of fruit dehydration are summarized.

By W. V. CRUESS

Fruit Products Laboratory, University of California, Berkeley, Cal.

THE olive is one of the oldest of cultivated plants and the fruit and the branch of this tree have long been mentioned in the chronicles of man's progress from barbarism to present day civilization. The olive branch was the symbol of peace in ancient times, and it is recorded that Noah was presented with a sprig of olive leaves when the good ship Ark was stuck fast on the top of Arrarat. On the Mount of Olives in Palestine are trees that are over 1,000 years old and still alive and bearing fruit, according to those who have visited the Holy Land. In Italy are olive trees equally old, states Dean Hunt of the College of Agriculture of the University of California, who has recently studied the horticulture of that country. The tree was in olden times grown principally for the production of oil which was used not only as a food but also for anointing the body and probably for fuel in lamps. The use of the fruit for pickling by the use of wood ashes or salt is described in the writings of Herodotus.

The pickled olive of the ancients, however, would not be considered a delicacy on the modern American table. The writer has eaten the salt cured olive and has also cured olives by this process, which is used at the present time under the title of the "Greek process" and he can testify that the Greek process olive is not up to our ordinary conception of what a good pickled olive should be. It possesses the fresh olive flavor minus some of the bitterness plus considerable saltiness; a combination that seems to call for association with the fermented product of the vine. Olives and vines have long been spoken of in the same sentence ever since man has written history and one may well wonder whether the ancient Greeks invented the Greek cured olive in order to improve their thirst for wine or whether the lingering flavor of their bad wines drove them to invent the salt cured olive to counteract the vinegary flavor of the beverage. Suffice it to say that the two go well together (in Greece).

#### Spaniards Improved Green Olive

The Spaniards and the French improved upon the efforts of the Greeks and produced the green pickled olive of fame and commerce. Several factors contributed to the development of the green olive. First, perhaps, was the fact that

the olives of Spain are subject when ripe, or nearly ripe, to the attack of the olive fly, the larvae of which render a large percentage of the fruit unsuitable for pickling purposes. By picking the fruit green the presence of well developed olive fly worms in the flesh of the delectable green olive is avoided. The Spanish have for centuries been famous for their sherry and other sweet wines, which require a special process of fermentation and the wine makers have become experts on fermentation. The curing of green olives is largely a fermentation process; consequently the Spaniards were the logical parties to discover the fermentation of green olives and the methods of controlling it. Once the process and the product became known the use of the relish grew rapidly and as the Greek olive blends well with the Greek wine, so the green olive blends with the good old Spanish wines of bygone days and fond memory.

As the green olive was an improvement upon the Greek product, so the modern ripe process California and Arizona olives are a great improvement upon the green olive. In fact they are so good that they may be eaten with the greatest relish without the fermented juice of the grape. The ripe olive is much higher in food value than the green product, containing in most cases nearly twice as much oil as the latter. It is more easily digestible than the green olive for the same reason that ripe apples are more readily digested than green ones and because the ripe olives are thoroughly cooked before they leave the factory.

#### Food Value of Ripe Olives

The green olive is primarily a relish and as such has a very important place on the table, but the ripe olive is not only a pleasing before dinner relish but it is also a food comparing very favorably in calorific value with other cooked foods.

The color of ripe olives is brown to black. That is their natural color and does not indicate decomposition, as some who see them for the first time may think. Like the cherry and the plum, the olive is colored when it is ripe.

Olives have been grown in California since the days of the Mission fathers of the eighteenth century, and one of the varieties imported by Father Junipero Serra or his com-



panions is still the most important variety grown in the state. Appropriately enough, it is known as the Mission variety. The Mission variety is the hardiest and the most productive of the varieties grown in California commercially and is as well the variety that is richest in oil and flavor and most easily pickled. Second in importance is the Man-



**An Olive Orchard in California**

zanillo, the variety grown in Spain for the small green olive and in California for ripe pickles and oil. The large varieties used in Spain for the production of queen olives are grown in California in limited quantities for ripe pickling. These are the Sevillano and the Ascolano varieties. Like many other large fruits they are shy bearers and not very resistant to unfavorable changes of weather. The fruit is soft and difficult to pickle. On account of their enormous size, however, they are much in demand and the price is high.

For many years the California growers, as growers of other fruits have done, tried to imitate the European green olive but with only indifferent success, both as regards quality and profits. Also, as in other industries that may be mentioned, the olive planting in the state underwent a boom period and because some one said the Mount of Olives is a dry old hill, yet covered with fruitful olive trees, the California optimists proceeded to plant most of the dry hillsides in sight with olive trees. These "orchards" in many cases still stand as evidence of the faith of the fruit growers of those days in the ability of the olive to grow in thin soil without water. Experience has proven that the olive requires the best of care from infancy to old age if it is to bear paying crops.

#### **Discovery of Ripe Pickling Process**

Coincident with the discovery that the olive tree requires care and good soil came the discovery of the ripe pickling process. Many claim the honor of the discovery but Mrs. Ehmann of Oroville, California, in the heart of the olive industry, appears to have as good a claim as anyone. For a number of years the ripe olives were marketed in bulk unsterilized in brine as they came from the vats. In this condition the fruit keeps only a short time. It remained for Prof. F. T. Bioletti of the College of Agriculture at Berkeley to discover that the olive lends itself well to sterilization in hermetically sealed containers. This was over twenty years ago. Mrs. Ehmann was the first to make use of the new method of preserving the fruit, and others soon followed. The rapid development of the olive industry in California dates from the general adoption of the sterilization process. By its use it became possible to extend the marketing of the ripe olives over the entire year and to invade the market of the Eastern United States.

The faith of California's leading horticulturists in the future of the industry is shown in the size of some of the

plantings. The Los Angeles Olive Growers Association has a single orchard or approximately 2,000 acres, of which over one half is in bearing. A number of other orchards are over one hundred acres in extent each. The total plantings of the state exceed fifteen thousand acres. The state normally produces 5,000 to 8,000 tons of ripe pickles and about 200,000 gallons of oil.

#### **Huge Capital Investments in Plants**

Some of the pickling plants are of very great size and represent heavy investments of capital. In the pickling room of the Mt. Ida Products Company of Oroville are over 1,000 pickling vats, each capable of holding more than 1,000 pounds of fruit. The vat room of the Los Angeles Olive Growers, known throughout the State as the Sylmar plant, is nearly as large. One of the most famous and oldest plants is that of the Ehmann Olive Company, of Oroville, founded on the skill and business ability of Mrs. Ehmann. Elbert Hubbard during one of his visits to California saw fit to describe this plant and its products in his inimitable style. Of the more recently built plants the Mt. Ida is the largest and best known. It owes its success to the organizing ability and unusual energy of "Bert" Meek, its founder and president. He was one of the first to investigate the possibility of utilizing the olive plant and canning equipment for the canning of other products during the long period of idleness between olive seasons. The olive ripens in October and November. The Old Mission Packing Company and the Gifford Company of San Diego are old and well known firms. The American Olive Company and the Grogan Co. of Los Angeles, the Curtis Company of Long Beach, the Albers Co. of Riverside, the Sunical Company of Oroville (now a co-operative growers organization) and last but not least the California Packing Corporation may be mentioned among others, to show that the olive industry is quite sizable.

#### **Olive Bitter Before Pickling**

When the olive comes from the tree it is intensely bitter. One of the standard tricks played upon the unsuspecting Easterner is to hand him a large juicy ripe olive fresh from the tree and then watch him register the facial expression for intense bitterness, which usually changes rapidly to one denoting revenge at any cost. The ripe fruit is cherry red to black in color. The purpose of the pickling process is to remove the bitter flavor and to retain the dark color of the ripe fruit. The bitterness is removed with a dilute solution of lye and the color is fixed by a special aeration process. The well known flavor of the ripe pickled olive is a result, first of the high oil content of the fruit; secondly of the lye process which removes the bitterness and astringency of the fresh fruit and finally of the brine curing process given after the dye has been removed.



**Olives in the Processing Vats of a Large California Plant**



The different steps of the pickling process may be of interest to the reader.

The fruit is gathered in canvas or metal buckets, great care being taken not to bruise the fruit during pickling or transfer from the picking bucket to the lug box. The lugs used are small and fitted with heavy top cleats which keep the bottoms of the boxes from resting on the fruit. If the fruit is to be shipped a long distance, as is often the case, it is placed in 50 gallon barrels and covered with a brine, usually of 3 to 5 per cent salt (12.20 degrees salometer test). The brine prevents bruising and checks the growth of mold or decomposition organisms during transit. It also hardens the fruit so that the texture of the finished product is improved and at the same time facilitates the action of the lye and brine used in the pickling process. Many factories regularly store their olives in such a brine in large tanks or vats at the factory as a regular part of the pickling process. The brine is commonly termed a "holding solution."

#### Sorting for Color and Size

At the factory the first operation is the sorting of the fruit for color and ripeness and the grading into different sizes. The sorting for color is done as the fruit travels on load belts. The size grading is accomplished with several types of grading machines. One of the most common consists of several wooden grading screens of different sizes over which the fruit is carried by rubber "fingers." The large fruit is removed by the first screen and the small fruit by the last so that excessive bruising of the large fruit is avoided. The California Ripe Olive Association has adopted the following size grades:

Standard .....	120-135	olives per pound
Medium .....	105-120	olives per pound
Large .....	90-105	olives per pound
Extra large .....	75-90	olives per pound
Mammoth .....	65-75	olives per pound
Giant .....	55-65	olives per pound
Jumbo .....	45-55	olives per pound
Colossal .....	35-45	olives per pound

These size grades are based upon difference in diameter of the fruit which vary by one sixteenth of an inch between grades. Fruit below 9.16 of an inch is used for oil making in most plants, although one plant makes a special grade of the very small olives and markets the fruit under the name of "petite" olives.

The large fruit is naturally most in demand and commands a higher price than the smaller sizes. The flavor and food value of the small olive are, however, equal to those of the larger sizes. In fact small Mission olives are much richer in oil than the large Sevillano and Ascolano olives.

The graded fruit is placed in holding brines for two or three weeks or if it has been taken from holding solution for grading goes direct to the lye vats. Some factories omit the holding brine treatment.

The first lye treatment is carried out in concrete or red-wood vats or tanks. The usual tank holds about 1,000 pounds or less of the fruit. Large tanks are apt to cause uneven treatment because of the difficulty of stirring. The vats are usually shallow, for the purpose of facilitating stirring.

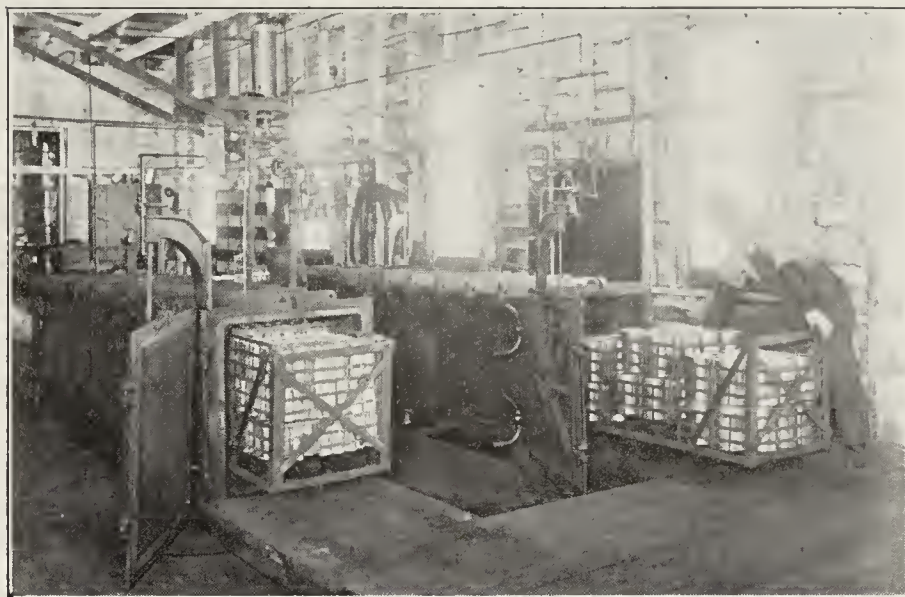
#### Processes Differ Somewhat

The purpose of the first lye treatment is primarily to make possible the fixation of the brown or black color of the fruit, although to a limited extent it also has the function of hydrolyzing part of the bitterness. The strength of the first lye solution will vary greatly with the variety of olive, the temperature of the pickling room, the maturity of the fruit and the general picking method used. Considerable pride is taken by the different "processors" in their methods, and each one employs a process different in

one or more respects from those of other processors. However, the general method consists in one or more preliminary lye treatments followed by exposure to the air to darken the color, or oxidation of the color in other ways; a final lye treatment or several of them to remove the bitterness; a leaching with water to remove lye and bitterness; a short storage in dilute brine to develop the desired flavor and finally sterilization in hermetically sealed containers.

The first lye treatment lasts long enough usually for the lye to barely penetrate through the skin of the fruit. If a 1½ per cent solution is used this will require for the Mission olive at 70 degrees F. three to eight hours. The lye is partially neutralized by the fruit acids and is ordinarily discarded, but experiments have proven that it may be used several times if a small amount of fresh alkali is added to replace that neutralized by the fruit.

Following the first lye treatment the olives are allowed to remain exposed to the air until the desired color is ob-



Steam Retorts Used for Cooking Fruits

tained; usually two to four days. The olives are stirred frequently during this exposure to permit even darkening of the color. In some factories the oxidation and color fixation is carried out beneath water.

Most factories use several weak lye solutions and several exposures to the air instead of one preliminary lye solution and one exposure. This is claimed to produce a darker colored product and to give a better flavor. It is doubtful whether such a process, that is repeated lye treatments and exposures, improves the flavor. The exposure to the air is principally a means of fixing the fruit color.

The last lye solution is weaker than the first; normally 1 per cent or less. It is allowed to penetrate the fruit completely to the pit in some factories and almost to the pit in others. It removes the last trace of bitterness by hydrolyzing the bitter principle to glucose and other sweet or tasteless compounds.

Water is then placed on the fruit and changed several times daily until there is no longer any taste of either dye or bitterness. This requires usually about one week.

The fruit is then stored in a brine solution of 2.3 per cent salt for several days to improve the flavor and firm the flesh. Too long storage will result in loss of color and flavor. Usually one week or less is all that is necessary. This treatment also prevents shrivelling of the fruit in the can during sterilization.

#### Tin Cans Most Commonly Used for Packing

Plain tin cans of elongated design are most commonly used for containers, although glass is employed in two or three plants. Glass is not used more widely because it does not withstand sterilization at 240 degrees F. so well as tin. Before canning the olives are very carefully sorted



for color and quality and again graded for size. They are filled into cans or jars and a hot brine of 2.4 per cent salt added. The cans are exhausted at 190-200 degrees F. and sealed in the usual manner.

The sealed packages are sterilized at 240 degrees F. for 40 minutes, a temperature which has been proven by Dr. K. F. Meyer of the University of California and Dr. E. C. Dickson of Stanford University to kill the spores of any resistant bacteria that may occur in this fruit.

This high temperature of sterilization is used because the olive, on account of the dye treatment, contains no free acid. It is a well known fact that any food product low in acid is more difficult to sterilize than one high in acid because the acid reduces the death temperature of all spoilage organisms.

The adoption of the above temperature and time was

made during the 1920 season under a ruling of the State Board of Health of the State of California, in line with its other regulations regarding the preparation of food products in California. Sterilized in this manner olives are the safest of canned foods as well as a delicious food and relish.

The California Ripe Olive Association, with headquarters in the Higgins Building, Los Angeles, recently co-operated with the university in publishing a booklet of recipes for the use of ripe olives in salads, baked meat dishes, Spanish dishes, and in other ways. The writer's family has tested many of these and finds them reliable and very tasty. The olive industry owes a great deal to the valuable organizing and publicity efforts of the manager and the secretary of the Ripe Olive Association, Frank Symonds and J. J. Hoey, who are at the present time actively engaged in telling the country of virtues of the California ripe olive.

## Advantages in Dehydration of Fruits

### Improves Quality of Product in Many Cases—New Method Will Open Up Markets For Rapidly Increasing Crops

**T**HAT the production of dehydrated fruits in California will receive an unprecedented stimulus during the next few years and in many cases will supplant the sun-dried method of preservation, opening up new markets and providing additional outlet for our rapidly increasing crops, are the conclusions reached by W. V. Cruess and A. W. Christie of the College of Agriculture of the Agricultural Experiment Station, Berkeley, Cal., as a result of a series of experiments conducted by them at that institution and extending over a period of three years.

The advantages claimed for dehydrated products by the experimenters, whose results are summarized in the September bulletin just published by the University of California Press, are that dehydrated fruits, when cooked, more nearly resemble the fresh fruit in color and flavor and may be produced under more sanitary conditions than the sun-dried products. It is also believed that dehydration permits more exact control of quality and yield, requires less land and fewer trays per given tonnage, and makes it possible to continue all the steps of drying and packing in one building.

Discussing the growth in acreage, the authors state that in 1919-20 about 275,000 acres were planted. During the 1920 planting season, nurseries were unable to supply the demand for trees and vines. An increased output of fruit, they believe, is to be expected within the next three to five years, as the newly planted orchards and vineyards come into bearing.

This increased production makes almost imperative, says the authors, some newer and better method of preserving fruits than the sun-drying process, in order to improve their quality and thus open up for them new markets. "It is doubtful," they say, "whether the fresh fruit markets and canneries will absorb all of this increase and even under the most favorable market conditions, it is probable that a greater proportion than at present, of certain fruit crops must be preserved and marketed in the dried form. It will therefore be necessary to increase our markets for dried fruits and other fruit products if fruit growing is to continue to be profitable. This can be aided by improving the quality of these products, particularly of the dried fruits, and by diversifying them. Dehydration offers a means of producing dried fruits of new forms and, in some instances, of better quality.

"The sale of one important fruit product directly affects the marketing of other fruit products and of fresh fruit. If the quality of dried fruit is high, it is naturally more in demand and commands a higher price than an inferior product. However, much fruit that is unsuitable for marketing, either fresh or for canning, can be made into an acceptable dehydrated product which can be profitably mar-

keted. The utilization of such fruit for dehydration prevents waste and aids in stabilizing the market for all fruit products.

"In California all fruits except apples are usually dried in the sun. Twenty-five to thirty years ago, in the early days of the state's fruit industry, most fruit was dried by artificial heat. It has been stated that wire screen trays were used for the first fruit dried in the sun in order that the product should bear the imprint of the screen in imitation of the artificially dried product. Some sun-dried fruit, however, was marketed on its own merits, and being superior to the average artificially dried fruit, it soon came into greater favor. In time, in California, sun-dried prunes and raisins displaced the product of the artificial driers.

"Methods of dehydration have been improved recently and it is now contended by operators of modern dehydrators that properly dehydrated fruits are equal or even superior to the sun-dried fruits, and that dehydration possesses certain advantages over sun-drying.

"It must not be forgotten, however, that California has established a reputation for the excellent quality of her sun-dried fruits and that the great bulk of our dried fruits will probably continue to be sun-dried, however successful dehydration may become. At great expense to the fruit-growing associations, a widespread demand for Sunsweet prunes and apricots, Blue Ribbon sun-dried peaches and Sun-Maid raisins has been created. It is believed that dehydrated fruits of high quality will find new markets not necessarily in direct competition with the sun-dried fruits and to that extent provide an increased outlet for the crops of our rapidly extending orchards.

"With this viewpoint in mind and also to test the validity of the claims of superiority made for dehydration, investigations extending over the past three years have been conducted by members of the Fruit Products Laboratory."

The results of these investigations are carefully described, both text and tables indicating the effect of maturity on yield and composition in the case of dried peaches, shrinkage in the preparation and dehydration of various fruits, loss of sugar from raisins subjected to various temperatures, comparative yields by sun-drying and dehydration of various fruits, amount of sulfur dioxide in sun-dried and dehydrated fruits, approximate operating costs of dehydration, typical operating costs in prune dehydrators, and recommended methods for dehydration of various fruits.

Further investigations in the dehydration of fruits are under way, the authors report, and their investigations have undoubtedly given a stimulus to independent experimentation. It is fully expected, they state, that many of the present practices of dehydration will be greatly modified during the next few years.



# What New Chemical Discoveries Mean to Food Manufacturer and Dietitian

## Scientists Gathered at Sixty-Second Annual Convention of American Chemical Society Discuss Economic and Nutritional Aspects of Research Experiments—Plea for Vitamine Institute

THREE thousand representative scientists from all parts of the United States assembled for the sixty-second convention of the American Chemical Society at Columbia University, New York, September 8 to 21. Although the conference embraced every conceivable subject of interest to the chemical world and was very comprehensive in its scope, it devoted a considerable portion of its time to a discussion of food problems, and manufacturers and dietitians found much to interest them in the nutritional questions discussed, which ranged all the way, as one member quaintly put it, "from a careful study as to why cows go blind to a detailed consideration of the sweet uses of the American candy tooth.

Of chief interest to nutrition experts was the symposium on vitamines conducted by the division of biological chemistry, in which the effect of these potent yet invisible new food factors was discussed from the standpoint of the dietitian and food manufacturer as well as the chemist.

### Plea for Vitamine Institute

In a paper by Dr. B. Bass, a special plea for a Vitamine Institute was made. Dr. Bass stated that all the experiments conducted by members of the Chemical Society had proved beyond a doubt the utmost importance of the presence of the vitamine in foods. Nowadays, Dr. Bass said, there are in the market many food products advertised as rich in vitamines. The necessity of such products cannot be overestimated provided they are truly rich in vitamines and at the same time reasonably low in price so as to be available to the poorer classes of people who are, generally speaking, the victims of diets deficient in vitamine content.

Papers read by members before the division of biological chemistry went far to establish the essential nature of vitamines in the diet. That more eggs will hatch if hens are fed with substances rich in vitamines, was the theme of one of the discussions on the vitamine symposium. The results of researches into this interesting economic fact were given in a paper entitled "Relation Between the Vitamine Content of a Feed and Hatchability of the Eggs Produced," prepared by Professors J. S. Hughes, L. F. Payne and F. E. Fox, of the departments of chemistry and poultry husbandry of the Kansas State Agricultural College, of Manhattan, Kansas. The tests were conducted at the Kansas Experimental Station.

"While the experiment is not completed," reported the authors, "The results thus far show that hens to which are supplied a feed having a low vitamine content will produce eggs with a low vitamine content. The eggs from hens receiving a feed having a low vitamine content produce a smaller per cent of strong, vigorous chicks than eggs from hens receiving a feed of high vitamine content.

"Don't count your chickens before they are hatched," continued the scientists, "is certainly good advice to give the modern poultryman, for, on the average, not half of the eggs he sets produce strong vigorous chicks. Very often the per cent hatched is much less than this. This means

an annual loss of probably 300,000,000 eggs, worth over \$12,000,000, for it is estimated that at least 600,000,000 eggs are set in the United States each year."

### Yeast and Bacteria Vitamines

Dr. Louis Freedman, of the H. A. Metz Research Laboratories, New York, also contributed to the discussion on vitamines, making a comparison of the yeast and bacteria growth-promoting vitamines. Dr. Freedman emphasized the considerable work that has been done in ascertaining the identity of the substance stimulating the growth of yeast cells and its relation to the growth of bacteria, but stated that up to the present time, no great progress had been made. Calling attention to the work of Funk and Dubin who first separated the yeast growth-promoting vitamine, called vitamine D, "from the anti-beriberi or B vitamine with which it is found in autolyzed yeast," Dr. Freedman stated a new stimulus has been given to this work and demonstrated some of the phenomena connected with this new vitamine and that which acts on bacteria.

"Working with a strain of hemolytic streptococci and pure yeast cultures," he said, "we have found that beef and beefheart infusions, peptone, and autolyzed yeast contain substances that are equally active for the growth of these organisms. These substances active for bacteria, have also been found in certain specially prepared proteins such as casein, serum albumin, egg albumin, zein (from corn), fibrin, gelatin, edestin (from hemp seed), and oryacin (from rice).

"We were able to extract these substances by shaking autolyzed yeast and beef-heart infusion with certain absorbents such as fuller's earth and a wood charcoal called norit. These substances were then recovered in concentrated form by extracting the absorbents with barium hydroxide and glacial acetic acid respectively. These extracts when added to the required media for both streptococci and yeast cells, which alone do not give definite and analogous growth activity to these organisms.

"We believe these substances to be of vitaminic nature and our results so far show that they are either identical with vitamine D or of a similar nature."

### Effect of Low Vitamine Diet on Cows

Other experiments on the nutritive value of vitamines were described in a paper before the biological chemistry division entitled, "The Influence of the Vitamine Value of a Feed on the Nutritive Value of the Milk Produced," prepared by Professors J. S. Hughes, J. B. Fitch and H. W. Cave, all of the Kansas State Agricultural College. These experiments developed the fact that milk with a low vitamine content fed to cows has deleterious effects upon the offspring and that, in some cases, calves which are nursed on substances deficient in vitamines go blind.

"Four calves were started on the experiment," reported the scientists. "Two were from cows which had received a feed low in vitamine during the entire gestation period; the other two were from cows which had received normal



feed. During the first week the two calves from the experimental cows received their mothers' milk. At this time one of these cows died and her calf was then given the other experimental cow's milk. The two calves from the cows receiving normal feed were fed on herd milk exclusively. All four calves wore muzzles so they could get no other feed.

"All the calves," they continued, "seemed to be normal for the first five weeks, at which time one of the calves receiving the experimental milk became blind. It died when it was forty-two days old, showing nervous symptoms very much like an animal with beri beri. The other experimental calf became blind when seventy-eight days old and died nineteen days later with symptoms like the first. A calf from a cow receiving normal feed was placed on the experimental milk at the time the first calf died. It did not become blind but died at the end of nineteen weeks. The two calves receiving the herd milk are still normal after a period of eight months.

"The vitamine content of the feed received by the experimental cows and the milk they produced has been tested by experimental animals. The milk is much lower in its water soluble and fat soluble vitamine content than the herd milk, but is equal to the herd milk in its antiscorbutic vitamine content.

"The experiment shows that although a cow receiving a feed low in vitamins may give a fairly abundant supply of milk, it is of such poor quality that it is not an adequate food for her young."

#### Deterioration of Sugar

Economic questions affecting the sugar industry in the United States were discussed at the section on sugar chemistry. Enormous losses in sugar were predicted in a paper read by Dr. C. A. Browne, director of the New York Sugar Trade Laboratory. The paper, which was entitled "Role of Fermentation in the Deterioration of Cane Sugar Products," prepared with the collaboration of his associates, C. A. Gambel, G. H. Hardin and M. H. Wiley, read in part:

"The average quality of raw cane sugar manufactured in the tropics has shown but little improvement during the past five years. A chemical study of the sugars manufactured in Cuba during 1920 and 1921 shows that only about 35 per cent of the factories make good keeping sugar of low moisture content. Sugars during deterioration become hygroscopic, owing to the invert sugar that is formed and the additional moisture that is absorbed from the atmosphere, especially in humid weather, accelerates the activity of the destructive micro-organisms. The losses from deterioration in the storage of the 1,500,000 tons of the unsold remainder of the present Cuban crop will reach an unprecedented figure. Well managed factories have no difficulty in making good keeping sugars. The chief requirements are (1) cleanliness in the factory to prevent infection, (2) a moisture content sufficiently low to retard the growth of yeasts, moulds and bacteria, (3) bagging the sugar after it has cooled to prevent sweating, (4) storage in clean dry warehouses in piles that are not high enough to burst the bags.

#### Comparative Deterioration Qualities

"The deterioration of soft refined sugars is less rapid than that of raw cane sugars of same polarizaton. This is probably due to the fact that the soft refined sugars are cleaner, owing to their having been filtered over bone-black, and contain fewer destructive micro-organisms.

"Sugar cane molasses also undergoes deterioration upon standing. A sample of Cuban molasses under examination at the New York Sugar Trade Laboratory since 1914 underwent a loss in sucrose from 34.8 to 18.5 per cent; the invert sugar during this same interval increased from 25.1 to 33.8 per cent. Theoretically, if the sucrose destroyed were all inverted, the invert sugar should have increased to over 43 per cent. There has, therefore, been a destruction

of some 10 per cent of invert sugar in this molasses. This may have been produced by torulas, a species of none-inverting yeast, or it may have resulted from some chemical change as a result of retarded froth fermentation. The molasses has darkened perceptibly during storage and has acquired a bitter disagreeable taste.

"While it is the film of molasses adhering to the sugar crystals that produces the deterioration of raw sugars, the fermentation of molasses in these films produces entirely different results from that observed with molasses in bulk."

#### The Dietetic Value of Sugar

The advantages of sugar as a cheap food were emphasized by W. D. Horne, chemist, Yonkers, New York, in an address on the "Dietetic Value of Sugar," in which he paid a high tribute to the nutritive value of sweets.

"The proper appreciation of sugar as a food," said Mr. Horne, "has been slow in developing, partly from restrictions of price and tariff imports and partly from over-indulgence.

"Experience, however, has gradually lead to increased consumption in most countries, the United States rising in this respect from 50 pounds per capita in 1885 to about 90 pounds in 1921. The average consumption for all Europe, though, is only 24 pounds per capita for 1921, while Australia takes 100 and Cuba 112.

"Although we consume less than we safely could and economically should, our demand for our quota is very strong, as evinced by the recent high prices when a shortage threatened.

"In a well balanced food ration one should take about 69 per cent carbohydrates, 30 per cent fats and 10 per cent proteids, measured by the calorific efficiencies of the various articles of diet. A fair average is 2500 calories a day of food energy for an adult and as sugar develops 1860 calories per pound, the 3.8 ounces of sugar we eat daily provides about 17.7 per cent of the food energy we acquire.

"This, at 7 cents per pound for sugar, is so cheap, our entire food, if it could be bought as reasonable in comparison, to the energy it bestows, would cost each one of us only \$34.38 per annum.

#### Sugar One of the Cheapest Foods

"A comparison of caloric efficiency and cost per pound of our principle food materials shows that for the energy developed, sugar is one of the very cheapest foods we possess, and while it compares closely with some of the cereals, it costs only from a half to a twenty-fifth as much as most of the articles which constitute the chief part of our diet.

"Experiments carefully conducted under Government supervision show that 5 ounces of sugar daily can be easily digested by an adult, while some countries have shown an average daily consumption of 5.7 ounces per capita of entire population. This indicates the probable safety of increasing the sugar in our bill of fare by 20 or 30 per cent.

"The index numbers of retail food prices in various countries show that prices are about one and one half to four times as high as before the war and in the main these ratios are borne out by other commodities, so that it is evident that no possible economy in food should be overlooked.

"Our sugar and sugar products usually cost about 6 per cent of our total food bill and furnish over 18 per cent of our food energy. It is evident, then that with this efficient and favorite food so abundantly and cheap at hand we should make even greater use of it, to the increase of our food energy and to the saving of our money."

#### Gains of Sorghum Sirup Industry

Prof. J. J. Willaman of the University of Minnesota described the gains of the sorghum sirup industry as a result of new developments in the process of manufacture. He stated that a cleaning machine had been perfected which takes the whole sorghum plant, removes the seed heads,



and then separates the leaves from the stalks. This separator can be adjusted so as to remove the suckers also, and hence provide a mill juice of uniform maturity. The machine also does away with hand work entirely in the harvesting and the cleaning of the cane.

"Instead of the wasteful settling process of clarification," continued Dr. Willaman, "the whole juice, after defecation with heat and lime, is filtered. Kieselguhr, a substance resembling fuller's earth, is considered an ideal filtering medium. Treatment of the filtered juice with activated charcoal produces a light colored, mildly flavored product.

#### Vacuum Evaporation Economical

"Evaporation in a vacuum," observed Dr. Willaman, "is economical. The seed heads are dried in a special kiln, thrashed, and then the seeds are dried in a grain drier. They constitute a valuable by-product. The leaves and bagasse (waste from the crushers) are continuously fed into the fire boxes and constitute 85 per cent of the fuel used in the plant."

The speaker said that the use of a cleaner had reduced the labor cost per gallon of sirup from 1.3 hours to 0.7 of an hour. It is believed that this machine could be adapted to the handling of sugar cane also. Dr. Willaman asserted that the cheapening of the processes, the improvement of chemical control, and the breeding of pedigreed and improved cane have inaugurated a new era in sorghum sirup manufacture.

#### Chlorine Gas as Germicidal for Milk

In the sessions of the division of agricultural and food chemistry, much interest was evinced in experiments reported by Dr. Harrison Hale of the University of Arkansas,

Fayetteville, Ark., and Dr. L. Bleeker, bacteriologist, of the Arkansas Agricultural Experiment Station, indicating that gas chlorine, now widely used for bleaching purposes, is being employed for preserving milk.

#### Water Purification

"The gas, chlorine, which is so widely used for war purposes," said the scientists, "may possibly be employed to make war on disease germs on milk and milk products. The increasing use of chlorine in some form as a germicide in water purification is most notable. For the safeguarding of public and private supplies it has proved itself almost indispensable. The former prejudice against it has practically disappeared, and continued experience has demonstrated its efficiency and shown that it is not harmful.

"It occurred to us that a similar use of active chlorine as a germicide for milk products might be made. In fact, early in 1918 a city food inspector stated to one of us that free chlorine was being used in milk. In March, 1918, tests were made on ice cream by placing very small amounts of sodium hypochlorite in the mix of pasteurized cream before freezing. A decided reduction in the number of bacteria and the elimination of a few gas forming bacteria present resulted."

#### Effect of Pectin on Gels

In the same division the effect of pectin, acid and sugar on the character of gels was discussed by C. A. Peters and R. K. Stratford of Amherst College, Division of Agriculture and Food Chemistry. The experiments worked out quantitatively how amounts of these substances affect the stiffness of fruit gels. They determined the exact ratio necessary to be maintained for a given stiffness.

## Temperature In Canning

IN canning work one of the most important considerations is the time required for the food at the center of the container to reach the temperature of the retort or water bath in which it is being processed. United States Department of Agriculture Bulletin No. 956, "A Study of the Factors Affecting Temperature Changes in the Container During the Canning of Fruits and Vegetables," which has just been issued, centers attention on these time-temperature relations. The purpose has been to bring out the underlying principles, rather than to lay down definite rules of procedure. The results of this experimentation are of interest to scientific workers in the field, to commercial canneries, and similar large-scale handlers of foods.

#### Destruction of Bacteria

Successful preservation of foods by canning is due primarily to the fact that in the processing, or cooking, the bacteria and other micro-organisms which cause spoilage are destroyed. Since the elimination of these micro-organisms is dependent upon the use of heat as a sterilizing agent, it becomes of paramount importance to know just what temperatures and processing periods will destroy them. If uniformly good results are to be expected a sufficient degree of heat must penetrate to all parts of the can or jar and must be maintained long enough to render all micro-organisms harmless. Before an accurate judgment as to the proper cooking period can be found it is necessary to know how long a time is required for the heat to reach the food at the center of the container.

#### Measuring Temperatures

The mercury thermometer, if properly calibrated and standardized, has been found sufficiently accurate for practical work. A satisfactory apparatus has been devised for using the mercury thermometer to measure temperature changes at the center of the can.

The fruits and vegetables as processed in these tests fall roughly into two groups with reference to time-temperature

relations. The first group consists of those fruits and vegetables, such as string beans, packed so that there is a free liquid filling the interspaces between the pieces of material. The rate of change of temperature at the center of the can in this group is very rapid. The second group consists of materials of a heavy or pastry nature that are packed in such a way that little or no convection can occur, as with corn or sweet potatoes. The rate of change of temperature in this group is very slow. Sometimes mechanical agitation is employed. Variations in the composition of the material, however, have very little effect if the consistency of the material is such that no convection can occur.

#### Effect of Salt on Temperature

Salt has very little direct effect upon the rate of change of temperature in the can. Dilute sugar solutions have only a small effect, but the concentrated solutions retard the rate of change. Solutions of starch also retard it. In 5 per cent starch the consistency becomes such that all convection is stopped and the rate of change is very slow. Other material of a viscous nature, such as protein or pectin, retards the rate of change of temperature. The retarding effect of a glass container is of more importance in the first group than in the second. Glass cools faster than tin in the air, but can not be cooled in water.

Differences in the diameter of the container are only of importance in the processing of materials of heavy consistency such as corn. Whether the processing temperature is 100, 109, 116 or 121 degrees C., the temperature of the bath or retort is reached in the container in approximately the same time. Higher temperatures, however, break down the tissues of tomatoes, which are a striking exception to the rule. Both the single period and intermittent processes are studied in this bulletin, which is available upon application to the United States Department of Agriculture.



# Consumers Favor Flour Put Up in Cartons

## An Investigation By Advertising Agency Discloses Preference for Convenient Package

BY W. M. ROSE

of Walter B. Snow and Staff, Merchandising Counsellors, Boston, Mass.

"I T can't be done. Dealers won't handle it in that way. Customers are satisfied with the 24½-pound bag. They won't accept any change. Flour in five-pound cartons will not go."

The words came over the top of the roll top desk with the snap and precision of a machine gun, and bore the unmistakable convictions of a man who felt that he knew the wants of the several million housewives in the territory he served—and he certainly should have known, for twenty-odd years he had been the flour buyer of an immense eastern grocery house.

And I suppose that I should have heartily agreed with his superior wisdom, for I was just a merchandise man with an advertising agency and was on intimate terms with our only in the form of bread and rolls. But somehow I couldn't accept the statements that he made, and his conviction inspired me, just from a sense of curiosity, to investigate further.

It all came about in this way. Having as a client a firm vitally interested in packaged goods, I was making an investigation into the buying habits of New England housewives. In several conversations, the increasing use of the package for food products was mentioned.

"You can buy almost everything except bread flour in cartons now," said one housewife, "and I wish I could get it that way. I suppose some miller will put out a packaged flour some time."

"Would you really prefer to buy your flour in cartons?" I asked.

"Yes," she answered, "for several reasons. 'It would be cleaner, more convenient to handle, more satisfactory in every way for me,'" she answered. "You know we live in an apartment and haven't any unnecessary room."

It was a new one to me. The more I thought of it the more I wondered how universal was that desire.

I called upon several of my married friends and put the question up to them. They all favored the idea except one.

"I like the idea but I want to buy more than five pounds at a time," the lady averred.

"Do you always buy soap in single cakes?" I asked.

"Oh no," she answered, "I usually purchase five or six."

"Any reason why you could not purchase five boxes of flour?" I questioned.

"None at all; I had not thought of that. Yes; I believe I would like the carton idea for flour."

So it was with the dozen others I interviewed. Only one still clung to her preference for the old-time sack.

But up to this time all those interviewed were city dwellers.

"Of course," I thought, "I will get very different answers from the farmwives and the small town merchants."

Imagine my surprise when upon my next trip through rural New England I found not one dissenter among the many consumers interviewed—some living from five to ten miles from the nearest trading center and of the nine dealers located in towns of from 3,000 to 20,000, the leading dealers in each town, I found that five would welcome such an innovation—one dealer stating that he would discontinue all his various grades of flour in favor of a packaged brand if one was offered him; while another stated that he would willingly pay a higher price for a packaged article. Two would handle it if a demand was shown and two would have nothing to do with such new-fangled notions.

Thus did conservative New England view an innovation in the marketing of a staple.

But how would the rest of the country receive it?

I looked around for a representative class of women to whom a questionnaire might be sent and selected the presidents of 500 women's clubs. I wrote them frankly, stating the proposition with as great care not to influence them as possible with the following amazing results.

### ANSWERS:

Total Replies .....	138
Yes Replies .....	100
No Replies .....	38

### PERCENTAGE OF ANSWERS:

Yes .....	100 or 72 per cent
No .....	38 or 28 per cent

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Total Answers .....	138	100 per cent
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In considering the results of this questionnaire, it must be remembered that the women to whom it was sent represent a very substantial class, probably the most representative in the country. In general, these women are managers of well-established homes, have large families and many of them have servants. It was originally supposed that the five-pound package idea would appeal primarily to the small housekeeper in the larger cities. Therefore, it is very significant that these women indorse the idea by such a large per cent.

The "yes" replies on the whole were more emphatic than the negative replies, many of which were qualified. The affirmative replies in many cases were underscored and contained many enthusiastic comments. Twenty-three per cent of the negative replies were qualified. That is, these women approved of the principle of the idea, but either thought the price would be too high or had families which would require larger amounts of flour. The majority of the affirmative replies represented the women of the larger towns while the negative replies, in the main, came from women residing in the smaller towns.

Most of the women admitted the greater convenience or sanitation of the five-pound weevil-proof package whether their answers fell in the negative or affirmative group.

A number of the affirmative replies represented the view of the whole club of which the writer, in each case, was president.

### General Conclusion

An overwhelming majority of women representing a very substantial class of housewives with well-established homes buying large quantities of flour were very much in favor of the five-pound package.

### Volume of Foodstuffs Carried by Railroads

The volume of perishable foodstuffs to be moved during the next three months will be the greatest in the history of the railroads, exceeding by nearly 40 per cent the quantity moved during the corresponding period last year, according to estimates of the American Railway Association, based on reports received from the railroads.

For twelve months which ended on June 30, last, the railroads of the United States moved 848,425 cars of citrus and other fresh fruits and vegetables, packing house products, eggs, butter and cheese. Each car carried an average load of 14.4 tons, while the average maximum load was 15.7 tons per car.



# Dietitians to Meet This Month in Chicago

## Fourth Annual Gathering of Association to Include Round Table Discussions, Commercial Exhibits and Trips to Institutions

THE fourth annual meeting of the American Dietetic Association will be held in Chicago, October 24, 25 and 26 at the Hotel La Salle. The officers have prepared a program of wide scope and believe that unusual features this year in the round table discussions, commercial exhibits, and trips will make this the most successful annual gathering the association has yet held.

Round table discussions at which every dietitian will have the opportunity of discussing her particular problems with the leaders of the profession will be one of the big features of the Chicago gathering.

The commercial exhibits will be especially interesting, it is believed, inasmuch as equipment and labor saving devices are to be emphasized as never before, thus affording those who are planning new kitchens or dining rooms an opportunity to see all types of equipment and to decide which is the best for their needs. The non-commercial exhibit is to consist of charts, bulletins, health posters, and all forms used in the business management of dietary departments.

In the exhibit room it is announced, will be found well-known beverages served in new ways; package meats; suggestions for utilizing less expensive cuts of meat; two types of dishwashing machines; heavy duty electrical equipment; two types of electric toasters; at least one excellent bread slicer; a mixing machine; fancy groceries and a few well known staple canned goods; two powders for every kind of cleaning; silver-polishing machines; china, glassware, silverware, linens, ranges, coffee urns, steam tables, etc.

Another special feature of this convention will be trips arranged by the Chicago Dietetic Association. These will include visits to the leading hospitals, large commercial firms, public health and infant welfare departments, as well as buildings, parks, and amusement places of interest.

Commercial institutions visited will include Sprague-Warner's wholesale house, Field's tea room, and Wilson's packing plant. Among the hospitals, the Presbyterian Hospital will receive special attention from the delegates, especially Dr. Woodyatt's metabolism ward. Cook County Hospital with its kitchen equipment service in wards and the Sarah Morris Hospital with its milk laboratory will also be visited. The welfare centers include the nutrition clinic of the Infant Welfare Society of Chicago, the Association of Practical Housekeeping Centers, and a dispensary nutrition clinic.

### Officers of Association

The officers of the American Dietetic Association are: Lulu Graves, honorary president, superintendent dietary department at Mt. Sinai Hospital, New York; Mrs. Mary DeGarmo Bryan, president, 626 Bergen Ave., Jersey City, N. J.; Dr. Ruth Wheeler, first vice-president, professor of nutrition, University of Iowa Medical School; Rena Eckman, second vice-president, head dietitian, University of Michigan Hospital, Ann Arbor, Mich.; E. M. Geraghty, secretary, student, University of Illinois; Ellen Gladwin, treasurer, head dietitian, Jefferson Hospital, Philadelphia, Pa. Other members of the executive committee are: Mary Lindsley, manager, Grace Dodge Hotel, Washington, D. C.; Lucy Gillette, head of nutrition bureau, A. I. C. P., New York City.

### Program for the Convention

October 24, Monday morning, 9:30 A. M.

Administrative Section, Miss Lindsley, chairman, presiding.

Discussion of Questionnaire—Miss Mary A. Lindsley, manager Grace Dodge Hotel.

Equipment—George A. Smith, Chicago Range Company.

Administrative Problems—Miss Agnes Gleason, manager Parkway Tea House.

Salesmanship—Miss Mildred Robinson, in charge of salesmanship, Chicago Public Schools.

Monday afternoon, 2 P. M., Miss Gillett, chairman, presiding

### Social Service Section

To What Extent Shall Racial Customs Enter into any Americanization Scheme—Miss S. P. Breckenridge, Dean of Women, University of Chicago.

Dietary Customs of Various Nationalities:

Syrians and Roumanians—Miss Bessie Lee, Visiting Housekeeper Association, Detroit.

Jewish—Mrs. Mary Schapiro, United Hebrew Charities, New York.

Negroes and Mountain Whites—Miss Fairfax Proudfit, University of Tennessee Out-Patient Medical Department, Memphis, Tenn.

Italians—Miss Reba Reed, Association for Improving Condition of the Poor, New York.

Monday Evening, Dinner Meeting, 6:30 P. M., president presiding.

President's Address.

Professional Spirit—Miss Harriet Vittum, Northwestern University Settlement House.

Internal Hygiene and Its Relation to Mood—Madison E. Bentley, professor of psychology, University of Illinois.

Industrial Leadership—A. E. Morgan, president Antioch College.

October 25, Tuesday morning, 9:30 A. M.

Education Section—Dr. Wheeler, chairman, presiding.

What Nurses Need to Know About Food and Dietetics—Mrs. Higgins, chief of nursing service, U. S. Navy hospitals; Major Stimson, chief of nursing service, U. S. Army hospitals.

Experience meeting for members only, strictly two minute speeches by 10 dietitians.

Hospital Training of Dietitians—In Rochester, Minn.; in Peter Bent Brigham, Boston; in Johns Hopkins, Baltimore.

Tuesday afternoon, 2:00 P. M.—Round table discussions.

1. Education, led by Dr. Wheeler.

Reports by Sub-Committees.

A Course in Dietetics for Nurses.

Preliminary Course for Dietitians in Universities, Colleges and Technical Schools.

Hospitals and Medical School Training for Dietitians.

2. Dieto-Therapy, led by Miss Eckman.

Activities in Dieto-Therapy, Laboratory Research and Clinical Application.

Educational Propaganda—Fields of Greatest Need.

3. Social Service, led by Miss Gillett.

Co-operation in the Public Health Movement from a Medical Standpoint, Blanche Joseph, Michael Reese Hospital, Chicago.

From a Nursing Standpoint—Speaker to be announced.



From the Social Worker's Standpoint—Florence Nesbit, United Charities of Chicago.

4. Administration, led by Miss Lindsley.

Discussion on equipment, labor, supplies, and food, led by division chairmen.

Tuesday evening, 8:00 P. M., president presiding.

The Sphere of the Dietitian—Dr. C. P. Howard, Prof. of Internal Medicine, State University of Iowa.

Personnel—Hugh Fullerton, H. Black Company, Cleveland, Ohio.

October 26, Wednesday morning, 9:30 A. M., president presiding.

Fifteen Minute Talks:

The Present Need for Cafeteria and Institutional Managers, Miss Blanche Geary, Y. W. C. A., New York.

The Hospital Dietitian—Miss Marion Peterson, Swedish Hospital, Minneapolis, Minn.

An Institutional Problem—Miss Mabel Little, Directory of Halls, University of Wisconsin.

The League of Business and Professional Women—Miss Lena Phillips, executive secretary.

Business meeting.

Wednesday afternoon, 2:00 P. M.

Dieto-Therapy—Miss Eckman, chairman, presiding.

The Dietary Needs of a Children's Hospital—Dr. A. L. Daniels, Iowa State Child Welfare Association, University of Iowa.

The Newer Ideas on the Dietetic Management of Diabetes and Their Practical Working Out in the Hospital—Dr. R. T. Woodyatt, Assistant Professor of Medicine, University of Chicago.

Wednesday evening, 8:00 P. M., president presiding.

Relationship Between Diet and Nervous Conditions with Its Significance in Social Problems—Dr. Sydney Kuh, Michael Reese Hospital, Chicago.

Systems of Follow-up Work in Dietetics—Mrs. Gertrude Gates Mudge, Nutrition Service, American Red Cross.

Human Engineering—Robert Wolf.

October 27, Thursday morning, 9:30 A. M.

Trips to:

1. Hospitals—Presbyterian Hospital, Metabolic Ward; Michael Reese Milk Laboratory; Cook County Hospital, Diet Kitchen.

2. Commercial Institutions—Sprague Warner's wholesale groceries; Marshall Field's tea room; Wilson's packing plant.

3. Welfare Centers—Infant Welfare; Nutrition Clinic; Association of Housekeeping Center.

Thursday afternoon, 1:00 P. M.

Luncheon—Chicago Beach Hotel.

Thursday afternoon, 3:00 P. M.

Trip through University of Chicago.

## Some Observations on Dehydrated Food Products

### Effects of Different Methods of Treatment on the Vitamine Contents—Results of Drying of Bananas

By K. GEORGE FALK AND GRACE McGUIRE

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**I**N an address before the New York section of the American Chemical Society, presented in December, 1919, and published in *The American Food Journal* (1), February, 1920, some of the salient features of "New Methods of Food Dehydration" were outlined. Since that time a number of additional articles have appeared in *The American Food Journal* as well as in other places, dealing with one or another of the phases of this important topic. Reference may be made especially to the comprehensive treatment by Henry W. Banks, 3d, of the "Commercial Possibilities of Dehydration" in the April and May, 1921, issues of *The American Food Journal* (2).

The whole question of food dehydration is at present in a state of active development. It is not the intention, therefore to present in this paper any final conclusions with regard to the processes, products, or experimental or theoretical researches, which are in progress along many lines. It must be clearly recognized in the first instance that food dehydration is not an isolated topic. It is intimately connected with, and in fact a part of, the question of food production, distribution, and utilization. It is involved in food production and distribution because of the possibility of handling and transporting the products by methods which are not practicable at present without such treatment. With regard to the utilization, dehydrated foods offer new methods of preparation and use of many common foods. This will be illustrated by means of a concrete case later in this paper.

#### Occurrence of Vitamines after Dehydration

With regard to the question of vitamines, it must first be pointed out that there are a number of different substances and groups of substances which are essential to the

growth, maintenance and reproduction of life. Some of these substances are chemically well defined. Others are not known as chemical individuals. It has, however, been recognized for many years that certain classes of food products were necessary for the orderly processes of life to continue, and that in their absence definite pathological symptoms would arise. Vitamines are names which are given to unknown substances or groups of substances which confer upon foodstuffs the property of overcoming certain of these more or less definite symptoms. That such properties have a real existence cannot be questioned even though their chemical characterization is so uncertain. Among the diseases which have been ascribed at various times to a lack of vitamines in the diet may be mentioned scurvy, beriberi and polyneuritis, xerophthalmia, rickets, etc. At the same time it must be pointed out that the lack of so-called vitamines has been shown in some cases to cause a general lowering of the resistance of the animal body with a consequent increased susceptibility to infection.

#### Effects of Different Methods of Treatment

The points of interest in the present connection are the effects which the different methods of treatment employed in dehydrating foodstuffs have upon the vitamine properties. Considerable work has been and is being done, but at times certain general principles are ignored in the conclusions which are drawn. Thus, the general statement of the Committee on Accessory Food Factors of the Lister Institute of Preventive Medicine and the Medical Research Committee (in England) published in 1919 with regard to the antiscorbutic factor that "it may be regarded as an axiom that dry or dried foodstuffs will not prevent scurvy" is in error. The drying process used as well as the original condition



of the foodstuffs are of primary importance, and it may be noted that dehydrated carrots (3), orange juice (4), cabbage (5), tomatoes (6), and milk (7, 3), which retained a considerable part of their antiscorbutic properties were obtained, when these products were prepared under suitable conditions.

The obvious conditions to be considered are the state of the foodstuff at the time of dehydration; the conditions of dehydration including the temperature, time of heating, and presence or absence of oxygen; and the time and conditions of storage.

With regard to the first condition, the vitamine properties of animal products depend to a great extent upon the food of the animal. Thus, milk from cows will have a high or low vitamine (anti-scorbutic) content depending upon whether fresh green material is present or absent in their fodder (8). The anti-scorbutic property was found to vary from practically zero in old carrots to a moderate quantity in young carrots (3). It would hardly be expected that the dehydrated product would possess vitamine properties not shown by the original foodstuff. The importance of the condition of the original foodstuff is therefore to be emphasized in every case.

The effect of the method of dehydration on the vitamine properties is brought out strikingly in a paper on the "Antiscorbutic Potency of Milk Powders" in which, depending upon the process used, summer produced milk yielded products which either retained or lost their anti-scorbutic property (7). Although isolated experiments are available, no comparable extended study of the vitamine contents of foodstuffs dehydrated under different conditions is at hand. A number of investigations dealing with the effects of temperature and time of heating on the vitamins of various foodstuffs have been published (8). Much of this work has ignored the complicating factor of the action of the oxygen of the air, and in view of the observations recently made on its destructive action on the fat-soluble and anti-scorbutic factors (9), these results will have to be considered incomplete. For example, butter fat heated for four hours at 120 degrees C. without aeration remained active, but when a stream of air was bubbled through during the heating it became inactive (10).

#### Vacuum Method Offers Advantages

At the same time these observations, incomplete as they are, indicate that a dehydration process in which vacuum conditions are used, would offer definite advantages with regard to the retention of some of the vitamine properties because of the absence of oxygen. Further, a specific vitamine property frequently shows a different degree of stability depending upon the foodstuff with which it is associated. It is necessary to study each foodstuff separately and to determine in each case under what conditions the definite property is lost.

Not much can be said at present with regard to the best conditions of storage for dehydrated products because of the lack of tests of the substances before storage and at different intervals under various conditions. Even so, some results have shown that under suitable conditions, the anti-scorbutic property of dried milk in an airtight container was retained after a year at room temperature (11), and of dried orange juice after almost two years storage in a desiccator over sulfuric acid at room temperature (4).

Some of the possibilities with regard to the extension of the use of different foodstuffs which have developed as the result of the newer methods of dehydration will be illustrated by means of the banana. The wide use of the banana as such as a food is well known. The peculiar properties of the banana in the sense that it ripens rapidly when separated from the tree makes it difficult of transportation. The ripening, followed by over-ripening (or rotting), at even moderate temperatures has resulted in an uncertain economical feature in the marketing of bananas in the temperate zones some distance removed from the localities

where they are grown. Advantage has been taken of the possibilities which the developments in dehydration have brought and a number of new products prepared in recent years.

In the first place the composition of the banana shows it to be a food rich in carbohydrates, and also containing a certain percentage (about one per cent of the pulp) of protein. It also shows some vitamine properties (12). In ripening the large starch content of the green banana becomes converted very largely into simple carbohydrates such as glucose and cane sugar. It has therefore been stated at times that the unripe banana possesses the characteristics of a vegetable and the ripe banana those of a fruit.

The dehydration of the green banana yields a product rich in starch. This banana flour is used for cake, biscuits, bread, gruel, porridge, custard, waffles, etc. The digestibility of this starch when cooked has been found to satisfy all the requirements even in the case of infants (13). At the present time there is in existence in Costa Rica a plant capable of dehydrating daily 4,000 pounds of banana pulp. With green bananas this would mean 1,300 pounds of the dehydrated product, and with ripe in the neighborhood of 1,000 pounds. It may be stated that the mechanical features of the plant are in a comparatively high state of development. The green bananas are peeled and cut into cubes mechanically, requiring practically no handling during the process. Kiln drying is used and the time required two to ten hours, depending upon the temperature.

#### Banana Products by Dehydration

According to the method of dehydration two types of products may be obtained from the ripe banana. One of these is dark colored and of a somewhat pasty consistency and is obtained by an air dehydrating process. The other, prepared by a vacuum process, possesses the light cream color of untreated ripe banana pulp and may readily be obtained in a hard and brittle form, easily powdered. Both they may be stuffed with nuts, or covered with various coatings such as chocolate or cream, or spiced and then coated, etc. In addition the light colored variety in the powdered or the granular form may be used as breakfast food or with milk as "banana milk," etc. If higher temperatures are used in the dehydration processes, the banana is roasted to a certain extent and darkened somewhat. It is of interest that the product thus obtained may be used in place of coffee. This "banana coffee" has a most pleasant flavor and apparently lacks the possibly deleterious action of ordinary coffee.

These products indicate some of the possibilities which have already been developed with bananas and in general show how additions to the variety of foods at present available may be obtained. The future developments with the banana, and it may safely be said with many other food products, will depend on the one hand upon scientific investigations, and on the other hand upon the readiness of the growers and manufacturers of food products to develop their side of the preparation and use of such materials.

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# The Virtues of Yellow Vegetables

By J. J. WILLAMAN

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NO doubt most of us would feel like doing what that other gentleman did, who "coughed and spat with derision," if we were asked to believe that yellow foods were more nutritious than white; that, for example, yellow turnips are better than white, yellow cornmeal is superior to white, Hubbard squash is to be preferred to summer squash, Golden Bantam sweet corn to Carey, and so on. But it is very possible that this is so, especially if we look at the question of the nutritive properties of foods from a certain standpoint.

In October of 1919 Dr. H. Steenbock announced that he had noticed a close connection between the yellowness of certain foods and their content of the fat-soluble vitamine. He said that all yellow varieties of corn are richer than the white varieties in this element; that the yellowest oleos are the richest in it; that butter fat can be fractionated into a colorless portion and a yellow portion, and that the latter contains all the vitamins. Carrots and sweet potatoes are high, white potatoes and sugar beets are low in it. Later he found that green leaves, which contain a great deal of yellow pigment as well as green, contain also a great deal of the vitamine. Thus the leaves of alfalfa and clover are, weight for weight of dry substance, as rich as good butter in it; while lettuce contained less, and cabbage none at all. Furthermore, he was able to make alcoholic extractions of carrots and separate the two yellow pigments, carotin and xanthophyll, from each other. The latter fraction contained the vitamine.

Then Dr. L. S. Palmer entered the field, and pointed out several instances where the above analogy breaks down completely. He had fed chickens a diet which contained no yellow pigments whatever; yet the birds grew normally, and were normal in appearance, except that the shanks, combs, ear-lobes and wattles were free from all yellow in color. He argued that these birds must have received plenty of the vitamine in question, else they would not have grown. To clinch the evidence the pullets laid eggs, and the eggs had white yolks; and some of these white yolked eggs hatched into good vigorous chicks; hence they must have had the vitamine. He pointed out the fact that many animals store neither of these yellow pigments in any portion of their bodies. Thus the body fat and the milk fat of sheep, swine, dogs, cats, rabbits, rats and guinea pigs are perfectly white, yet these animals require the vitamine in their food, and no doubt secrete some of it in their milk. Again, all plant oils, as cottonseed and corn, are bright yellow, but are low in the vitamine.

And then the fight was on.

Although lower animals have been used for most of the feeding experiments with vitamins, there is rapidly accumulating a large body of information on the relation of the human organism to these substances. During the war many of the tragic effects of restricted and abnormal diets in many countries were explainable in terms of vitamine deficiencies. In one instance Dr. H. Gideon Wells cured the children of a whole population in Rumania of eye trouble by diverting a shipload of cod liver oil, which is very rich in vitamine A, to the region and parcelling it out to the afflicted people. The Russians had driven off the cows, and the people were reduced to a diet very low in vitamine A. Mellanby in England has published some very convincing arguments on the relation of rickets to diet, based both on feeding experiments with puppies, and on surveys of dietetic habits in rickety communities. The diets which are conducive to rickets are very low in fat and oils. Mellanby is not ready to say as yet, however, that vitamine A is the deciding factor, but he does believe

that some substance of the nature of a vitamine is responsible for rickets and for soft, decalcified teeth.

Thus it is easy to see why so much interest attaches to the possible simultaneous occurrence of yellow pigment and the fat-soluble vitamine. Given two varieties of carrots, one yellow and one white, but both of equally good flavor and texture, we should be glad to eat the yellow if we knew it to be richer in vitamine.

An English chemist made a crude preparation of the carotin pigment, and found it to be very potent when fed to animals. But when he purified the carotin, by repeated crystallizations, it lost its vitamine activity. Another English worker extracted carrots with alcohol, and found this extract to be very rich in both pigment and vitamine. When, however, she purified the carotin it lost its activity. Next she secured a good sample of butter, rich in vitamine, and by filtering it through charcoal removed its color so that it was as white as lard. On being fed to rats it promoted growth just as well as it did before the removal of the color. These observations made it appear unlikely that the vitamine and the pigment are the same substance.

Then Steenbock, last December, produced some more evidence for his hypothesis. He found that the vitamine content of pea varieties runs parallel to their yellowness, just as it did in corn. Feeding experiments with squash, sweet potatoes and carrots proved them to be superior to white vegetables. In the yellow corn kernel the color is mostly in the endosperm, or starchy layer; and this region also contains the vitamine, the germ having practically none. This explains why commercial corn oil, which comes from the germ, lacks vitamine A, although it does contain some pigment. Agents such as sunlight, ozone and air at high temperatures, which bleach fats, also inactivate their vitamine. He repeated the tests with pure crystalline carotin, and found that it promoted growth very actively.

But Steenbock was cautious. "In spite of this it is not meant to infer that the vitamine is necessarily a pigment as is evident from the fact that in butters the vitamine content is not of the same order of magnitude as the pigment content. Furthermore, in other materials, such as cod liver oil, an abundance of the vitamine may occur in the presence of little or no pigment."

The main point of Steenbock's hypothesis is that in plant materials, especially leaves and roots, yellow color and vitamine A practically always occur in parallel amounts. A considerable number of plant tissues have been examined, and the relation found to hold true. The list so far includes sweet potato, Irish potato, mangel, squash, dasheen, sugar beet, many varieties of corn and peas, spinach, chard, lettuce, cabbage, alfalfa, clover, timothy and tomato fruits. Now all the vitamins, and both of the above yellow pigments, are manufactured by plants. Animals are entirely unable to do so. And it is to be noted that the above relation between pigment and vitamine holds true in plant materials, and that it breaks down only when extracts of plants, or when animals and their products are considered. It looks very much as if the plant lays down the two substances in its tissues side by side, for a reason as yet unknown; but that the animal, when it eats the plant, has a use for the vitamine but no use for the pigments. Hence we should not expect the two substances to be necessarily found together after the animal has taken hold of them.

Two things are thus perfectly evident: that we cannot at present decide what the chemical nature of vitamine A is, but that the yellow vegetables, and likewise the green ones, are very likely to contain a richer supply of the vitamine than the colorless ones.



# Scientists on Watch For New Corn Products

## Uses of the Golden Grain Are Already Legion, Ranging From Refined Oil and Corn Flakes to Baby Sirup and "Lemonade"

Editor's Note.—E. W. Hellwig has devoted the past 12 years to problems connected with production, merchandising and advertising of some of the leading food products of the country. Mr. Hellwig's advice is constantly sought in counsel by many executives in this industry.

By E. W. HELLWIG  
President of the E. W. Hellwig Company

CORN is distinctly a New World product. Heliogabalus, despite his fervor in ransacking the world for new, palate-tickling dishes, never ate a sweet roasting ear, or reached for a second helping of corn sirup.

Henry the Eighth never used a salad oil made from the corn germ. And even the best informed doctors in the world today do not yet know that phytin—perhaps the most valuable of all the organic phosphorus compounds—is to be extracted in unusual quantities from corn.

In fact, so varied and valuable are the products derived from corn that no living man can put a boundary on the possible utility of the golden grain.

From the point of view of America, corn is the most valuable and most important of all our cereal crops.

We are now growing more than three billion bushels of the grain—the money value alone of which is almost as great as that of all the wheat, potato, rye and cotton crops put together.

### What Corn Is Made Of

The kernel of corn is composed of three parts—the germ, the endosperm, and the hull. The hull is the hard and horny outer covering; the endosperm, a white body, mostly made up of starch, but with a certain percentage of gluten; the germ a small, oily nitrogenous point.

Each of these is capable of being worked up into various products—some of which differ radically from the substance from which they were originally derived, as will be seen later.

Dr. Wiley gives the following analysis of the approximate composition of corn, which analysis requires no translation, so far as readers of *The American Food Journal* are concerned:

Moisture .....	10.75
Proteids .....	10.00
Ether Extract .....	4.25
Crude Fiber .....	1.75
Starch, etc. ....	71.75
Ash .....	1.50
	<hr/>
	100.00

The proteids of corn are characteristic—differing radically from wheat, or any other cereal protein. They are made up of several globulins, two classes of albumin, and two of zein.

The starch granules of corn also differ somewhat from those of other cereals, or from those of the potato—its most powerful starchy rival.

There are intricate technical differences—probably in the isomeric arrangement, and in the conversion of the starch granules—which give corn starch qualities different from those possessed by other starches.

### What We Make from Corn

To the general reader the uses of corn are more important than is its chemistry—although upon its chemistry depend its uses. These uses are many and varied, some

thirty different products being developed from the cereal.

Chief among these is a refined oil, derived from the germ, and marketed as a salad and cooking oil, under the name Mazola.

The process of preparing Mazola is an interesting and elaborate one. First, the corn, which is already shelled from the cob, is put into huge tanks, and covered with warm water, in which it is soaked for about 30 hours. This washes and softens the grain, and facilitates the process by which it is broken up into its component parts.

The water in which the corn is steeped is kept in constant circulation through the steeps in the system. When the water becomes concentrated with the soluble matter dissolved out of the corn, to about 5 degrees Beaume (which is a method of accurately measuring the specific gravity of fluid solutions) it is drawn off and concentrated in vacuum pans.

The softened corn is then cracked or torn to pieces in "attrition mills," which consist of two discs with projecting teeth revolving in opposite directions. Even though the corn kernel is thus subjected to attrition, however, the germ still remains intact.

The broken corn then flows through short deep tanks or troughs, called germ separators. The germ, owing to the oil it contains, floats on the top of the mixture. It is readily separated from the remainder of the grain, which is drawn off at the bottom of the separator. It is from this germ, the heart of the corn—containing about 56 per cent of oil—that Mazola is made.

The hearts of the corn are pressed through rolls to crack the germ. It is then delivered to the expellers, in which the crude oil is pressed out. The crude oil is filter-pressed, in order to remove any particles of germ which may have been carried through the expellers. After settling in tanks, the clear oil is drawn off and sent to the oil refinery. Here the free fatty acids of the oil are completely neutralized.

The fatty acids are then removed by filtration through kieselgur and fuller's earth. This oil is then put through a careful refining process which clarifies it, and greatly improves the taste and color.

Each bushel of corn yields approximately a pound of refined oil.

The residue from the refining of the oil is treated with an excess of alkali. The resulting soap stock is then separated out, cooled, and allowed to harden. This substance is used in the making of soap powder, soap and soap chips.

### Pound of Oil from Corn Bushel

From the corn germ is also extracted a gum, known as "paragol," used as a substitute for rubber in many ways. One of the most familiar of these is the "red rubber" bath sponge, now quite generally supplanting the old animal (or are they vegetable?) sponges, becoming more and more scarce because of their prohibitive price.

Many millions of eraser tips for lead pencils are also



annually made of this wonderfully efficient rubber substitute; while it is said also to contribute some 20 per cent to the synthetic soles of shoes, which are now enjoying such a vogue.

The residue of the germ also enters into the composition of oil cake and oil meal—largely used as a milk producer or milk increaser for cattle.

#### Corn Flakes and Their Preparation

One of the best-known of all corn products is cornflakes, familiar to every family in the land as a breakfast cereal and appetizing luncheon dish.

In the manufacture of cornflakes only the sweet, firm heart of selected white corn is employed. To facilitate the removal of the undesirable portions of the corn, it is placed in large steel cylinders and subjected to a steaming process. Here the moisture loosens the hull, which enables the de-germinating machines to crack the kernel into small pieces called "grits," so that the germ, in which the oil is contained, may be readily removed.

This, for the reason that the retention of this oil is undesirable in the preparation of cornflakes, because it would interfere with the appetizing crispness, which is so large a feature of cornflakes, and for the reason that the oil, if retained, might tend to become rancid.

The corn grits are put in large rotary steam cookers, salted and sweetened to taste. Cooking conditions are carefully controlled, both as to temperature and time ensued in the process.

After the process of cooking is completed, the corn grits drop upon an endless conveyor which travels beneath the cookers, and carries them to revolving screens, from where they are distributed to the drying kilns.

After the proper treatment in the kilns they are rolled into thin flakes between great steel rollers, capable of exerting a pressure of many tons, and then given a rest of about ten hours in the "curing bins," where the flavor is partially developed, which flavor is later completed by careful toasting.

The toasting process consists in dropping the rolled flakes into a revolving screen inside the oven, where they are whirled about and toasted over a quick, smokeless fire. This insures thorough and even toasting, so that every flake is, or should be, of the same golden color. It is then ready for packing.

#### The Starch Granule and Its Uses

The starch grains of the corn—which constitutes 55 per cent of the corn kernel—are converted into a great number of products, invaluable for dietetic and industrial uses.

In its natural, uncooked state, starch consists of small, hard, grains—round, white and tasteless. These are insoluble in cold water.

Hot water, however, converts the starch into a soluble form, which furnishes the basis for the development of food and other substances.

Starch is made from the endosperm—the body of the corn. This endosperm, which is a mixture of starch and gluten, is run through reels, with fine screen sides. Here the starch, gluten, and some of the fine particles of hull pass through the screen on the side of the reel, the coarser parts of the hull flowing out of the end of the reel.

This material is again ground in mills until very fine, care being observed, however, not to break up the starch cells. These mills are called burr mills, and consist of two large stones, one revolving on the other. In this mill the last particles of hull are removed from the starch and gluten as they are rolled and ground between stones.

The mash is now passed over shakers, vibrating tables covered with fine silk. The starch and gluten pass through the silk, while the fine particles of hull flow off the end.

#### How Gluten Is Removed

The starch and gluten passed through the silk shaker is next run over long tables or troughs, about two feet wide and 120 feet long, on which, because of their dif-

ference in specific gravity, the starch settles to the bottom, while the gluten and water flow off the end. This process is repeated, to insure the removal of any parts of gluten which may possibly have settled with the starch.

This starch is used in the manufacture of corn sirup, dextrine, sugar, edible starch and laundry starch. Its various processes of preparation are most interesting.

First, the starch from the tables is dried in kilns before being delivered to the departments in which the different varieties of starches are made. These kilns are long narrow passages or compartments heated by hot air, through which the "starch wagons," composed of screened sections to allow for the free circulation of air, are slowly moved. These carriers require about twenty-four hours exposure to the kilns to produce dry starch.

When the starch is thoroughly dry the wagons are emptied automatically by a machine which holds the wagons securely while turning them over several times, the starch meanwhile falling into a conveyor which delivers it to the reels for screening.

After reeling, a process similar to that used in the milling of flour, the starch receives further treatment, depending upon the kind of starch that is to be made. If it is to be used in the manufacture of sugar or corn sirup, the starch is not dried, but is delivered to the refinery in the same wet state as when it was taken from the table.

#### Edible Starch and Sirup

The edible starch, from which Argo is made, is an exceptionally pure and clean starch, for it is especially washed and milled to remove all traces of gluten, etc., and reeled until all small lumps and gritty substances are removed. After this, it is delivered to the packing room, where, without ever having been handled by human hands, it is automatically weighed, packed, and sealed in the familiar one-pound cartons.

In making corn sirup unmixed and sugar the starch from the tables is delivered to the refinery at about 22 degrees Beaume, where it is treated under pressure in closed bronze converters, with the addition of steam and a small amount of hydrochloric acid. Each converter holds about 2200 gallons of starch. The time required for sugar conversion is thirty-five minutes at 40 pounds pressure, and for a conversion into corn sirup unmixed—or glucose, as it is commonly called—is 22 minutes at 30 pounds pressure.

The addition of the hydrochloric acid is necessary to convert the starch into dextrine. This is the same action as that which develops in the stomach when starchy food is eaten, the hydrochloric acid in the stomach converting the starch into glucose, so that it can be assimilated by the digestive organs.

#### Recommended by Physicians

This "predigestion" of the glucose explains why this sirup is so very nourishing, and why many physicians recommend the sirup in modifying milk for bottle babies, and as an easily assimilated carbo-hydrate food.

After the starch has been converted, it is neutralized with sodium carbonate to change any excess of acid into wholesome sodium chloride—common table salt. The neutralized liquor is then filter-pressed, to remove small particles of gluten, or any unconverted substance which may have been carried along by the starch.

The clear liquor is then filtered through bone charcoal to clarify and remove the coloring matter present, the resultant liquor being a clear, colorless liquid, similar to the sirup made from cane sugar. The filters hold 78,000 pounds of bone charcoal. They usually absorb their capacity of coloring matter after five hours' use, after which the charcoal is removed from the filter, washed, and the organic matter burned off in kilns, after which the bone can again be used as filter substance.

The pure clarified liquor is concentrated to the desired Beaume in vacuum pans, after which it is ready for use



in manufacturing corn sirup—used in making candy, in baking, preserving, canning of fruits, etc.

The clarified liquor used in the manufacture of sugar is converted to a higher per cent dextrose than that used in sirup-making, the general practice being 45 per cent dextrose in corn sirup unmixed, and 80 per cent to 90 per cent dextrose for sugar. When the sugar liquor is run on tables and allowed to cool, it crystallizes or solidifies in large cakes. The cakes or slabs are chipped in fine pieces and sold to brewers, canners and vinegar makers.

The slab sugar is also pressed to remove the uncrystallized liquor called hydrol, and then ground and dried. This product is of a very high purity, and is the cerelose or bread sugar used by bakers, and in the manufacture of numerous food products.

There are many other substances derived from the manufacture of starch besides these delectable food products, which substances are used in the arts and in industry. For instance, the dry, milled starch is packed in barrels and bags to supply pearl and powdered starch for cloth sizing, paper, brewers, etc.

#### Laundry Starch and Dextrine

A portion of the starch from the mills is partly cooked with steam, to increase solubility, then pressed into cylinders at about 800 pounds pressure, and allowed to stand for 30 hours. This produces laundry starch, or lump starch. The large lumps from cylinders are crushed and passed over screens which grade the lumps according to size, before they are packed into cartons or boxes for the market.

Dextrine is made by treating the dry starch from the mills with a small amount of hydrochloric or nitric acid, and then roasting until the starch is partly cooked or dextrinized. This semi-converted starch is then bolted or screened through fine wire reels before packing for the market. Dextrine is used for making glue, gums, leather dressing, cloth sizing and in foods.

One of the principal by-products in the manufacture of corn products is gluten feed, which is partly derived from the steepwater, concentrated in vacuum pans. This steepwater yields a soluble matter amounting to about 4 per cent of the total of the corn treated, and is rich in proteins, which, with the hull or skins of the corn and the gluten separated in the various processes, is therefore valuable as a tissue and muscle-building food for stock, as well as a milk-producing agent.

The germ which was separated in the first part of the process, is dried in the same type of drier as the gluten feed, after which it is passed through rolls to crack the germ, and then delivered to the expellers in which the crude oil is pressed out, and the residue, which is the fibrous material of the germ, called oil cake ribbon is formed. This cake or ribbon, ground very fine, is used as oil cake meal and hog meal; the meal, containing about 9 per cent of oil, in addition to the proteins, phosphate, fibre and some starch, is used as a concentrated stock food.

#### A New Energy Sugar from Corn

Within the past year hundreds of clinical experiments have been made with a new corn product—anhydrous glucose, or dextrose, 99.6 per cent pure.

This product is formed by the hydration of amylose from corn, acted upon by hydrochloric acid, and represents the perfect digested or converted form into which all sugars and starches must be transformed before they can be absorbed into the blood stream, and burned in the system to yield heat and energy.

The perfect utilization of this pure dextrose by the system explains why it can be given in very large amounts, without disturbing the digestion, or without developing any evidence of sugar intolerance.

So perfect is the absorption and utilization of anhydrous glucose that there is a strong likelihood that it may com-

pletely change the present methods of treating many organic disorders, resulting from disturbances in metabolism.

For one thing, experiments conducted by careful observers seem to show that dextrose can be given to diabetic patients, for whom all other forms of sugar are forbidden, with great benefit to their general nutrition, and to their stock of strength and energy, and with an almost invariable decrease in their acidosis.

Dextrose has also been used as a feeding sugar for dehydrated, toxic babies—doomed to die of malnutrition—with astonishing results. In numbers of cases it has saved life, and turned puny little skeletons, listless and almost devoid of the energy that enabled them to continue to breathe, into rosy, active babies—whose weight climbed by ounces, day by day.

The administration of this sugar causes a rapid increase in weight in emaciation. It is a powerful stimulant, without the reaction that follows the use of alcohol, or of drugs that act by irritating the protoplasm of the cells.

It increases resistance to fatigue, and the capacity for sustained mental and physical effort. Also, under dextrose administration, the nervous system shows more stability.

Next to alcohol, anhydrous glucose furnishes the most easily utilized of all heat and energy yielding material, that can be put into the human fire box.

Dextrose lemonade may ultimately supplant caffeine-containing beverages as the "cup that cheers, without inebriating."

#### Phytin—The New Organic Phosphorus

What is destined to prove one of the most valuable of all corn derivatives was discovered in 1900 by Dr. Posternak, in Paris, and introduced to the medical profession by Professor Gilbert.

The discovery of this organic phosphorus is one of the most far-reaching ever made, and will have a profound effect upon the treatment of nutritional disorders in the future.

For the loss of phosphoric acid—estimated from 1½ to 3 grams daily—has been shown by modern investigation not to be made up by the administration of inorganic or mineral phosphorus compounds. It is contended that phosphates, hypophosphites, etc., are not assimilated in the system, and therefore cannot supply needed phosphorus to the body.

In supplying the phosphorus required by the nerves and tissues it is absolutely essential to have an organic phosphoric acid or its salt—as found in plants and cereals.

#### Solution to Problem of Phosphorus Therapy

Because of this fact Professor Gilbert is thoroughly justified in proclaiming the discovery of phytin, "the solution of the problem of phosphorus therapy," and in adding that "It has become possible, for the first time, to supply the organism with sufficient phosphorus in an assimilable form, and therefore to obtain therapeutic effects never yet obtained with any other phosphorus preparation."

Phytin, as found in corn, contains about 22 per cent of pure organic phosphorus, one of the most important, if not the most important constituents of nerve and brain substance, and a salt indispensable for the welfare of the entire system.

The introduction and the ultimate production of phytin on a commercial scale may revolutionize the present treatment of nervous diseases, anemia, and disorders of nutrition.

It will have an even more profound effect upon the health and longevity of mankind than has the discovery and utilization of the vitamins.

Suffice it to say that the golden kernels have, locked up in their mysterious cells, untold possibilities of wealth, health and comfort-giving. It may yet prove that the most important fact in connection with the discovery of America was the discovery of corn.



# Apple Candy Result of Varied Experiments

## Novelty in Sweet-Tasting Product Secured by Utah Agricultural College Experiment Station

IN a recent bulletin the Utah Agricultural College Experiment Station tells the story of the number of tests and experiments that had to be made to achieve a novelty in the line of apple products, namely apple candy, which provides a commercial use for cull apples.

The Experiment Station had first convinced itself of the desirability of such a candy, for the bulletin says:

"Data secured from the National Confectioners' Association of the United States show the following advances in the candy industry from 1849 to 1919: From very few candy factories to probably 3,000, about 300 of which were established in 1919; from about 3,000 retailers to approximately 75,000. In 1918 the capital invested in the manufacturing end of the business was in the neighborhood of \$160,000,000. There were 75,000 employees engaged in candy-making, and they manufactured 1,400,000,000 pounds of candy which sold to the consumer for \$700,000,000. Of the total 4,000,000 tons of sugar consumed in the United States in 1918 about 350,000 tons were used in candy. This business is truly immense.

"With this increased demand for candy there is sure to be more or less cheap candy made with a doubtful effect on the health of the consumer. On the other hand, there is danger of over-eating of the best candies which are high in sugar content. Fruit candies, which would be as palatable and valuable as sugar candies, are also valuable for their acids, fruit esters, and fruit sugars, and therefore would be healthful, especially as an aid to digestion."

The following apparatus was used in the various experiments that were necessary:

The fruit was evaporated in a small tunnel-type evaporator built after the plans given in Oregon Extension Circular No. 213. Both coal and wood were used as fuel and the temperature in the evaporator ranged from 90 to 120 degrees Fahrenheit.

The apples were peeled and cored with an Improved '98 Bonanza apple parer and corer. The grinding was done with an ordinary household food chopper. Dipping and steaming baskets were made of pearl screen wire and the steaming was done in a galvanized wash boiler over a gas flame.

Twelve varieties of apples were used: Antonovski, Black Twig, Gano, Gravenstein, Grimes, Jeniton, Jonathan, Lawver, McAfee, Northwestern Greening, Rhode Island Greening, and Rome.

Five experiments in all were made, and the various problems that had to be overcome were met one after the other. First there was not enough sugar, then an "apple leather" was secured that was too tough to chew, then a mass was derived that was too unwieldy to work into desirable shapes, and experiments were made to find a way to soften and sweeten the apple leather.

Since the common food chopper gave such excellent results in breaking up the fresh apples, it was given a trial in grinding up the "apple leather." This turned out the "leather" in a fine, paste-like, pliable form. This, however, was not cohesive enough to be readily molded into desirable shapes. This cohesive property was supplied by placing the paste in wire baskets which were placed in a steam vat contrived from a gas burner and wash boiler. The time of steaming varied from 10 to 20 minutes, depending on the former water content of the paste and the depth of the mass in the basket.

The apple paste or candy now possessed every desirable quality except sweetness. This was obtained by stirring granulated sugar into the freshly steamed mass.

The resulting product was better than anything that had been produced in any of the other experiments. However,

there were still two objections to it. The steaming made the apples very dark—nearly black—and the granulated sugar gave it an objectionable "gritty" feeling when taken into the mouth.

The object of the fifth and final experiment, then, was to overcome the objectionable features of the product described above.

After several trials it was found that a sirup composed of three pounds of sugar and one quart of water, stirred into four pounds of the dry ground leather, produced a soft, sweet, pliable paste that is an excellent confection. Chopped nuts and cocoanut were added for variety.

This method required about one-third the labor used in experiment 3 and so was economical in that respect. Furthermore, there was no waste of sugar, as in the dipping method. The final product is a soft palatable candy that may be molded into any desirable form.

The bulletin outlines the perfected process as follows:

1. Apples washed, peeled, cored and trimmed.
2. Ground up in food chopper and weighed.
3. Granulated sugar at the rate of 15 pounds to 100 pounds of chopped apples thoroughly stirred in.
4. Spread one-half inch deep on drying trays and evaporated for 36 to 48 hours. This dried mass is called "apple leather" and it may be stored indefinitely.
5. "Apple leather" is ground up in food chopper and so becomes a dry paste-like substance. This is also a storage form, and is called "apple paste."
6. A sirup composed of three pounds of sugar and one quart of water is made. This is stirred into four pounds of dry paste. Nuts and cocoanut may also be added.
7. The result is apple candy which may be molded into any desirable form and then allowed to harden slightly before use.
8. The peelings and cores should be saved as they may be easily cooked up for jelly. In commercial manufacture this would help to pay the cost of operating the plant.

### Cost Would be Low

The table reproduced below from the bulletin indicates that the cost of manufacturing this new candy will not be an appreciable one.

No prices are given because prices of both materials and labor are so variable that any prices given here would probably have no value in future times or other places.

All of the work was performed by hand and materials were used in small lots. By working with larger units and up-to-date power machinery the labor cost could possibly be cut to one-half or one-third the amount required with hand methods.

The bulletin concludes:

"By the addition of a little more machinery, dried-apple paste could be manufactured commercially in any evaporating plant in which the drying is done on trays.

"The apples may be peeled and cored on the power machines and trimmed by hand as usual. Instead of being sliced they may then be put through a power chopper or cutter such as is used in preparing apples for mince-meat. The apples may then be mixed in a power mixer with the required amount of sugar and spread on the trays to dry. When dry, the leather may be immediately ground up into "paste" and stored, or stored in the "leather" form and ground up later as it is sold.

"It would be desirable for the evaporators to sell the product in the dry paste form. The candy manufacturer could then mix in the sirup in small quantities as it is needed. This would also save transportation charges on sugar and water."



# Agar Plate Method in Milk Bacteriology

## This Procedure Now Generally Adopted by Public Health Laboratories— Other Methods Limited in Application

Editor's Note.—Dr. Harold Macy, the author of this article, is a Cornell graduate. He was engaged as bacteriologist by the McDermott Dairy Corporation, later filling the same position at the New York Agricultural Experiment Station at Geneva. He was chief sanitary inspector in extra-contonment zones in South Carolina and Virginia for the American Red Cross Sanitary Service and served in the pathological laboratory of the medical department of the U. S. Army during the war. Since August, 1919, he has been in his present position with the division of dairy husbandry of the University of Minnesota.

By HAROLD MACY

Assistant Professor of Bacteriology, University of Minnesota

**P**UBLIC health laboratories concerned in the control of the milk supply have adopted, in most cases, the familiar agar plate method for the bacteriological analysis of the milk. The results of these examinations have been the basis for the supervision of the supply and its improvement. Recognizing that the counts obtained by this method are only approximate, that considerable error may be introduced under varying conditions, and that the results of similar laboratories in other localities might not be comparable, it has seemed advisable to adopt some standard technique, which, when followed faithfully, would give satisfactory results, lessen the error, and make comparable the results from different laboratories. Obviously such a system would be of advantage to the particular laboratories concerned, to the interest of the public, and to the producers and handlers of milk. An understanding brought about through uniform conditions in the control of the milk supply would instill confidence in the minds of all.

Realizing the need for such standard methods, the American Public Health Association, through a very competent committee, after much study, issued a report in 1910, the first edition of the Standard Methods of Milk Examination. This report has served as a basis for future work and investigation. In 1916 the report was revised and a second edition published. The committee which continued its study of the problem, with the aid of many able bacteriologists, has now brought the methods to date in the third edition, published in 1921. The method itself has not been changed materially from that of the original edition. There have been a number of modifications made in some of the details, particularly in the adjustment of media, for which directions have been given. The determination of the hydrogen ion concentration of the media and the method of adjustment is explained. There have also been included in the report, the technique for the direct microscopic examination of milk, the Frost little plate method, the sediment test and the examination of milk for long chained streptococci. In all, it is a very valuable pamphlet and should be in the hands of all directors of milk control laboratories. Some very sound advice is given on general technique and the interpretation of results.

### Agar Plate Method Widely Used

The agar plate method for the analysis of milk is the most widely used and most applicable for ordinary routine examinations. The technique is as follows:

#### 1. PREPARATION OF GLASSWARE, ETC.:

All glassware must be thoroughly cleaned before use so that there is no free alkali, organic matter, or other ma-

terial left on the surface. Metal sampling tubes should be equally well prepared. When clean and dry, the glassware, etc., should be sterilized, preferably in the dry air oven, at a temperature of at least 175 degrees C. for one hour and thereafter kept in such a condition that they may not be contaminated.

#### 2. PREPARATION OF MEDIA:

The media to be used in routine analysis is the standard beef extract agar of the following composition:

Beef extract	.....0.3 per cent
Peptone	.....0.5 per cent
Agar (oven dried)	.....1.2 per cent
Agar or (market)	.....1.5 per cent
Distilled water	

The selection of the ingredients should be careful, using only standard products. The media may be prepared in the usual way.

#### 3. REACTION OF MEDIA AND ADJUSTMENT:

The reaction of the media according to the hydrogen ion concentration should be between pH 6.2 and 7.0, preferably pH 6.5-6.6. If within the former limits no adjustment is necessary.

To test the concentration; place 4 cc. of distilled water at 30-40 degrees C. in a test tube and add 1 cc. of the agar. Add 10 drops of the indicator (Brom thymol blue in a 0.04 per cent sol. in 95 per cent alcohol). The color obtained should be either a yellowish green or varying to a deeper shade of grass green if the reaction is between the above limits.

To adjust the media: add measured amounts of NaOH in dilute solution (N-14 or N-20) to the above until the proper shade of color is produced. Add sufficient alkali to the bulk of the media to bring it to the desired reaction according to this determination. The amount is determined very much as was the case in the older method of adjustment by titration.

#### 4. STERILIZATION OF MEDIA:

The media when placed in the containers desired, which may be either test tubes or flasks, properly stoppered, should be sterilized, either by autoclaving for 20 minutes at 15 pounds pressure, or by heating in the Arnold on three successive days for twenty minutes each day. (After the agar is completely melted.)

#### 5. COLLECTION OF SAMPLES:

Considerable care must be taken to obtain a representative sample. The milk must be thoroughly stirred or mixed without contaminating. At least ten cubic centimeters should be taken as a sample. For sampling milk in cans, it has been the experience of the writer that an aluminum sampling tube is the most satisfactory. Such a tube  $\frac{1}{4}$  inch



in diameter and 21 inches long serves the purpose admirably, removing a column of milk from the top to the bottom of the can. It also has the advantage of being unbreakable, which is distinctly advantageous when working in the field. They are easily cleaned and sterilized. In taking samples of bottled milk, the bottle must be thoroughly shaken. The sample may be drawn with a tube in the same way as from the can. Samples may be placed in tubes or bottles, preferably with glass stoppers or corked-lined metal screw covers. They must be well iced so that they may reach the laboratory at nearly the freezing point. They should be taken to the laboratory and plated as soon as possible.

#### 6. PLATING:

a. Dilutions.—For samples of unknown quality, it is best to make at least three dilutions, usually 1:100, 1:1000 and 1:10,000. If the milk is known to be of good quality the higher dilution may be omitted, and if of poor quality higher dilutions than the above may be used. Duplicate plates should be made in all cases. Dilution water may be prepared in any amount, preferably in glass stoppered bottles containing exactly 9 cc. or 99cc. of water which has been sterilized in the bottles for one hour at 15 pounds pressure in the autoclave.

b. Pipettes.—Straight-sided 1.0 cc. pipettes, graduated to 0.1 cc. are most satisfactory.

c. Inoculating plates.—The sample and all dilutions should be shaken thoroughly at least 25 times before making dilutions or plating. When the pipette has been filled, the contents should be delivered into the plate in such a way that they will run over the surface of the plate, with the end of the pipette touching the bottom of the dish. Do not raise the cover any more than is necessary to introduce the pipette.

d. Pouring.—The agar should be melted and cooled to about 40-45 degrees C. before pouring. About 10 cc. should be added to each plate. The agar and diluted sample is then thoroughly mixed by very gently rotating the plate in such a way that the contents will not run over the edge and thus cause serious discrepancies. The pouring should be done as promptly as possible.

e. Incubation.—Plates shall be incubated at 37.5 degrees C. for 48 hours.

f. Counting plates.—Plates containing between 30 and 300 colonies should be counted. The number on the plate multiplied by the dilution is to be reported as the final count. Where it is impossible to find a plate with the number of colonies within the above limits, the ones showing the nearest to 300 may be counted. If the number is so large that the count must be estimated, the fact should be recorded in making the report. The counts should be made when using a lens magnifying  $2\frac{1}{2}$  diameters.

g. Reporting counts.—It is not advisable to report that the count represents the total number of bacteria in the cubic centimeter of sample. It is simply a count of the number of colonies which develop on standard agar under the conditions of the analysis. So the counts should not be reported as "150,000 bacteria per cc." but rather as the standard methods suggest "official plate count, 150,000" or "150,000 bacterial colonies per cc." Too much emphasis should not be placed upon a single analysis. Conclusions should be reached only after a number of analyses where conditions are known to be uniform and then must be interpreted in the light of the other factors involved which may have had an influence on the quality of the milk. Exact counts should not be reported. It is well only to report with "not more than two significant left hand digits."

#### GENERAL:

1. All apparatus must be clean and sterile.
2. Media should contain only the highest quality of ingredients.

3. The reaction of the media has a marked influence on the count obtained.

4. Samples must be carefully taken and cared for before examination.

5. Dilutions must be accurate.

6. In counting, only true colonies should be considered. If necessary, use the low power of the microscope to differentiate colonies from sediment.

7. Do not attempt to make reports arbitrary. The plate method gives merely an approximation of the number of bacteria present.

8. With the colonies on standard agar it is not possible to tell exactly by mere observation what the bacteria are that make up the colony. Experienced workers can tell certain types but further study of the individual colonies is usually necessary.

9. Under present conditions, laboratories carrying on routine examinations of milk will find it to their advantage to adopt standard methods in order to have their results consistent and comparable with those of control laboratories in other localities.

#### Other Methods Limited in Application

There have been other methods devised for the bacteriological examination of milk. Most of them contemplated simplifying the method, the lessening of time required for obtaining results, interpreting conditions, and lowering the cost. At present, however, each is limited in its application or has not been sufficiently studied to justify its use as standard technique in the average control laboratory.

It is decidedly advisable for all control laboratories to avail themselves of the opportunity of obtaining copies of the Standard Methods for the Bacteriological Examination of Milk issued by the American Public Health Association at its office in New York City. The report not only covers in detail the standard agar plate method, but also describes the other methods of milk analysis now widely used. Valuable suggestions are given for the interpretation of results. A considerable bibliography of literature on the subject is also given.

The bacteriological analysis of milk has become such an important phase of the activities of municipal health bodies that it cannot be passed over lightly, but demands the attention of a large number of laboratory workers and able bacteriologists, who are adding stimulus to milk control and protection of the health of the community.

#### Will Discuss Food Problems at Public Health Convention

The fiftieth annual meeting of the American Public Health Association will be the occasion of a "health fortnight." From November 8 to 19 New York City will be the scene of activities connected with this event, and the publicity with its slogan, "health first," will stimulate interest throughout the country.

The fortnight period is to include three major divisions, a health institute from November 8 to 11, a health exposition from November 11 to 14, and the fiftieth annual meeting of the American Public Health Association, from November 14 to 19. Following the health institute, at which demonstrations of the most prominent methods in public health work will take place, meetings are planned in which speakers of world-wide repute will be heard and one of which will be devoted to a discussion of food and drug problems.

#### Court Will Pass Upon Wisconsin Corn Syrup Law

The Wisconsin law requiring that corn sirup bear a separate label, explaining that it is made of glucose, will again be brought into court. Contention has been made by the attorneys for the corn sirup manufacturers that the state law nullifies the federal pure food statute. A permanent injunction has held up its application for several years.



# FOOD CONTROL MATTERS

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## Tentative Decision in Cider Vinegar Controversy Pending Court Ruling

The controverted question as to the labeling of vinegar made from evaporated apples under the Federal Food and Drugs Act will be litigated in the Federal courts, according to a statement issued recently by the Secretary of Agriculture. Pending the decision of the courts, it was announced that vinegar made from evaporated apples and labeled as "apple vinegar" will not be interfered with.

It was tentatively suggested that the term "apple vinegar" might be used to indicate a product made from dried apple stock, but that such product should not be labeled "cider vinegar" or "apple cider vinegar."

This controversy over the legal labeling of vinegar has been going on for some time. Back in February, 1912, the Department of Agriculture in food inspection decision No. 140, defined vinegar, cider vinegar and apple vinegar as the product made from the alcoholic and subsequent acetic fermentations of the expressed juice of apples. This decision further provided that "the product made from dried apple skins, cores, and chops by the process of soaking with subsequent alcoholic and acetic fermentations of the solution thus obtained is not entitled to be called vinegar without further designation, but must be plainly marked to show the material from which it is produced."

### Manufacturers Contest Seizures

Upon finding in the market vinegar made from evaporated apples but labeled as cider vinegar the department made a number of seizures. Some of the manufacturers elected to contest these cases in court. From one cause or another the termination of such litigation has been delayed. In the effort to reach a satisfactory settlement of this disputed question the Secretary of Agriculture, under date of July 14, 1921, called a public hearing and invited representatives of the industry, food control officials, and all interested parties to submit their views.

A large number of vinegar manufacturers attended the September hearing, which was for the purpose of determining the nomenclature for vinegar made wholly or in part from dried apple products, as well as the differentiation between the terms "apple vinegar" and "cider vinegar."

### Representative Group at Hearing

The hearing was attended by a number of vinegar manufacturers. Letters were received from many state officials charged with the enforcement of food laws. The oral and written statements indicated that the tentative suggestion that the term "apple vinegar" be permitted for vinegar made from evaporated apples is not satisfactory either to some of the manufacturers who make such vinegar or to those who make vinegar from the expressed juice of the apple. Most of the state food officials also objected to the use of this term for vinegar made from evaporated apple stock. The manufacturers of vinegar from such material claim that as their vinegar is made wholly from apples and apple products they have a right to use the descriptive terms "cider vinegar" and "apple cider vinegar." Those who manufacture from the fresh apple juice insist that food inspection decision No. 140 be strictly adhered to.

### Dried Apple Products Sulphured

It was also brought out that dried apple products used in the manufacture of this type of vinegar are ordinarily sulphured. Chemists have relied to a considerable extent upon the determination of sulphur compounds in the finished product to detect vinegars made from dried apple materials. This has led manufacturers, who try to conceal the nature of their product, to remove the sulphur com-

pounds by the use of barium carbonate. Barium salts are known to be toxic, and vinegar which has been treated with barium carbonate does contain a certain amount of barium salts in solution.

It became evident that whatever decision might be reached the case would have to be passed upon ultimately by the courts. The Secretary of Agriculture has therefore determined to have the matter promptly settled by the courts. Pending the decision of the court no seizures will be made of vinegar made from evaporated apple stock and labeled "apple vinegar," as tentatively suggested on July 14, 1921.

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## Inspection of Milk Plants in Pennsylvania Being Carried Out

The six hundred milk plants in Pennsylvania operated on the butterfat basis, are now being inspected by agents of the Pennsylvania Department of Agriculture, while the work of the testers, more than five hundred in number, is also being scrutinized.

Agents of the Department have found that in providing standard tests and the regulation of licensed testers, for all milk and cream purchased by these plants, the act of 1919 is protecting not only the producer but the milk plant operators as well.

While evidence tending to show that the producers have been defrauded at some plants has been uncovered, it has also been found that in at least one instance, the producer was defrauding the milk plant, either by removing butter fat from his milk or by the addition of water.

In all cases where the department inspectors find slight irregularities and where it is apparent that there is no intention to defraud, conditions are ordered changed to conform to the law and prosecutions are not ordered, but where there is evidence of a deliberate violation of the law with fraudulent intent, the police powers of the act are invoked.

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## Food Inspectors Find Coffee Adulterant

A mixture of fine coffee chaff and screenings, which is added by certain coffee grinders and sellers to the lower grades of coffee in portions as high as 25 per cent, has been found by food inspectors, according to a statement by the Bureau of Chemistry, United States Department of Agriculture, which is charged with the enforcement of the Federal Food and Drugs Act.

Examination of the mixture showed that it consisted of finely ground particles of the coffee bean containing an excessive amount of chaff. It is made up largely of the thin silver skins and other soft parts of the coffee berry, together with the finer particles which result from the steel-cut process.

Coffee chaff and coffee screenings are not coffee, say the specialists of the Bureau of Chemistry, and mixtures of these with coffee are adulterated and misbranded under the provisions of the Food and Drugs Act, if labeled, sold, or offered for sale as coffee. Appropriate action will be taken in all cases found to be in violation of the law, say the officials.



# EDITORIAL

## Co-operation Between the Chemist and the Business Man

THE vital dependence of the business man upon the professional chemist in the matter of discovering new foods and in showing by experiments the commercial possibilities of old ones, though often mentioned in these columns, can never be too strongly stressed. In the recent investigations of Professor Alfred F. Hess, of New York, are seen but additional examples of the indispensable service performed by the man in the laboratory to the benefit of the trades.

After a number of experiments Dr. Hess has arrived at the conclusion that the juice of canned tomatoes is one of the most valuable sources of vitamins. These, it has been discovered, contain all three of the food essentials or vitamins, while in most cases fruit or vegetable juices contain only one or two.

Dr. Hess has shown that this canned juice is preferable to orange juice for infants, for the good reason that it is less expensive, and he recommends that the average child should get about an ounce of it a day.

It is discoveries of this kind that increasingly bring laboratory and business office into closer touch, with an end to dedicating their combined efforts to the public service. The American Food Journal is proud of the fact that its own best efforts have been in the direction not only of promoting the best interests of the professional and business classes in the entire food field, but also—and this is more important—of showing the way for better and broader co-operation between these groups.

## History Repeats Itself

THE rise in wholesale and retail prices during the World War was much the same as during the Civil War period, but continued longer after the close of the war, and resulted in a more violent drop than occurred after either the War of 1812 or the Civil War. Department Bulletin 999, just issued by the United States Department of Agriculture as a contribution from the Bureau of Markets and Crop Estimates, shows that in each case the highest price level was reached after the war closed, and in each case there was an extremely violent drop.

After each of the previous wars the first violent drop was followed by recovery in part and somewhat stable prices for a year or more, followed by a longer but less violent drops and again followed by a period of somewhat stable prices. The post-war price situation in wholesale food products was characterized by a slow drop in the beginning and a gradual increase in the downward movement, until June, 1921, when it had apparently completed its downward course, at least that part which might be described as violent. Basing its estimates on Civil War experience, and the slow rate of recession, the bulletin predicts some price recovery in the near future. It is to be expected that those that have dropped excessively will rise, and that the prices of most things above the general price level will fall.

## Foodstuffs, "Capitalism" and Russia

FOODSTUFFS are going into Russia via regular commercial channels of distribution. This is plainly the meaning of a recent announcement of several steamship companies in New York to the effect that American firms are already buying cargo space for shipments to Russia. The Lloyd Royal Belge, one of these firms, is organizing a special branch of its service between New York and Reval, Russia, to be prepared for all possible contingencies and announces that two of the top-notchers of its fleet are at the disposal of American distributors and commission men who have received orders from Russian private dealers. The fact that these orders are not for relief food but for food shipments on the regular commercial basis, is especially stressed by officials. The demand, it is said, involves the shipping of many tons valued at millions and includes foodstuffs, grain, oil, lard and flour.

Apparently, the pressure of famine has forced this latest change upon the Bolshevist authorities. That the barriers have been broken down in foodstuffs is especially significant, because these have been hitherto the very first things to be confiscated by the officialdom of Soviet Russia, and in the case of no other products, has the principle of nationalization been applied more stringently.

The fact that the private dealer in foodstuffs is at present allowed to exist in Russia—even allowing for emergency conditions—must surely be taken as an important indication of the economic trend in that country and a prelude to the re-establishment of regular commercial relationships.

## Some Signs of Revival in Export Food Trade

ANALYSIS of foreign trade figures for the month of August, as compared with those of July of this year and August of last, reveal many encouraging symptoms of interest to manufacturers on the watch for revival in exports. Foodstuffs figures, perhaps more conspicuously than any others, show the way the wind is blowing.

The chief increases are of course to be observed in the foodstuffs exported in raw condition. The August figures are \$105,871,000, compared with \$58,000,000 for July and \$104,332,000 for August a year ago. The 100 per cent increase undoubtedly represents the enhanced shipments of grain abroad and was entirely anticipated. What is more noteworthy to American food manufacturers, however, are the rises to be seen in the manufactured foodstuffs which have left the country—the amounts of \$49,951,000 of August, 1920, and \$57,928,000 in July, 1921, rising to the figure of \$66,607,000, during the month of August. A noteworthy increase in the amount of imported foodstuffs occurred, developing from sixteen millions in July to twenty-seven millions in August. The August figures for last year, however, went over the 160 million level. Comparison with last year's figures are of doubtful merit owing to the extraordinary decline of prices. There is no question that with respect to exports we are far below last year's levels. Increases in the export of food products, as shown by the Department of Commerce reports for August, however, augurs well for the future of the food industries in the country and are as good an indication as any of an all-round revival in trade that awaits us.





## Features of Federal Packer Control Bill

Legitimate Business Interests as Well as Public Welfare Will be Safeguarded, Says Secretary of Agriculture

Washington Bureau,  
The American Food Journal,  
622 Albee Building.

THE signing on August 19 of the packer control bill brought to an end a campaign undertaken over a long period of years for Federal control of this great industry. Some 70 stockyards in almost as many cities come under the control of the Department of Agriculture under this law, and the creation of a new division in the department was found necessary for the proper administration of the act, Chester Morrill, assistant chief of the bureau of markets and crop estimates, being appointed assistant to the Secretary of Agriculture and put in charge of the work.

### Safeguarding Legitimate Interests

"My whole effort will be administer this law in a constructive way and with the purpose of promoting the live-stock and meat industry and safeguarding the legitimate interests of everyone connected with it," said Secretary of Agriculture Wallace at the time of the passage of the measure. "There will be no arbitrary or offensive exercise of power. There will be no interference with the free operation of legitimate business nor imposition of burdensome and unnecessary rules and regulations. Discretionary powers will be used fairly and with due regard to all concerned. I assume to start with, that it will be the intention of everyone to observe the law and refrain from practices which may be forbidden."

The bill, so far as it relates to the packing industry, covers the buying of live stock in interstate or foreign commerce for slaughter, manufacture of edible products of such live stock for sale or shipment in interstate or foreign commerce, or manufacture of inedible products from live stock, and marketing of both edible and inedible products of live stock, as well as dairy products, poultry, poultry products and eggs, but does not apply to the latter unless the handling of such dairy and poultry products is associated with the business of buying and slaughtering live stock. The bill covers not only the actual shipment in interstate commerce, but also any transaction having in prospect the ultimate shipment in interstate or foreign commerce.

Packers are prohibited from any unfair, unjustly dis-

criminatory or deceptive practice or device; or from making or giving undue or unreasonable preference or advantage to any person or locality; or from apportioning the supply of any article between them, where the tendency or effect of such apportionment would restrain commerce or create a monopoly; or from dealing with any person for the purpose, or with the effect, of manipulating or controlling prices or of creating a monopoly or of restraining commerce; or from engaging in any course of business for the purpose, or with the effect, of manipulating or controlling prices or of creating a monopoly in buying, selling or dealing in any article, or restraining commerce; or from apportioning territory or purchases or sales or conspiring, combining, agreeing or arranging to manipulate or control prices or from aiding or abetting the doing of any of the foregoing acts. Apparently, the prohibition against the apportionment of territory, purchases or sales is absolute whether or not it might create or have a tendency to create a monopoly or restrain commerce.

### Powers of Secretary of Agriculture

The duty is imposed upon the Secretary of Agriculture to order the packer to discontinue any of the acts forbidden if, after hearing, he shall find the packer is guilty of such acts. Testimony taken at the hearings must be taken down and filed in the Department of Agriculture. The packer may within 30 days petition the Circuit Court of Appeals in the circuit in which the packer has his principal place of business to set aside or modify the Secretary's order. If he does file such petition, the Secretary must file in the court a full transcript of the record. The court then may on application of the Secretary, issue a temporary injunction restraining the packer from violating the order until the case is determined. The court may order additional testimony taken by the Secretary if that is necessary, and may affirm, modify or set aside his order. If the court affirms the order, its decree operates as an injunction against the packer. Either the packer or the department may carry the case to the Supreme Court of the United States.

### Packers Safeguarded Against Criminal Prosecution

The bill safeguards the packer against criminal prosecution until he has been cited to a hearing, has been given



an opportunity to be heard, has been found to be guilty, and has been ordered to discontinue the illegal act, and he may then appeal to the courts. In other words, the offense for which the packer may be criminally punished is that of failing to comply with the Secretary's order after he has exhausted his rights of appeal and has been denied relief.

#### Publicity for Accounts and Records

Packers are required to keep such accounts, records and actions in their business, including the ownership of such memoranda as will fully and correctly disclose all trans-business by stockholders or otherwise. If it is found that these accounts do not fully and correctly disclose such transactions, the Secretary of Agriculture is authorized to prescribe the manner and form in which they may be kept. Failure to keep such accounts as prescribed subjects the packer to fine or imprisonment, or both.

The powers of investigation of the organization, business, conduct, practices and management conferred upon the Federal Trade Commission are conferred upon the Secretary of Agriculture with respect to packers, and all of the duties and obligations imposed by the act upon any corporation being investigated by the Commission are imposed upon a packer who may be under investigation by the Secretary of Agriculture. Hereafter, the Federal Trade Commission, except with respect to any complaint which may have been filed by it prior to the enactment of the bill, will exercise none of these investigational powers unless asked to do so by the Secretary.

#### Status of Other Laws or Investigations

Nothing in the bill is to be construed to prevent or interfere with the enforcement of the anti-trust laws, or with any investigation pending at the time the bill becomes effective, or with the power of jurisdiction of the Interstate Commerce Commission which it may have under existing laws.

The Secretary of Agriculture is vested with the power to make such rules, regulations and orders as may be necessary to carry out the provisions of the bill.

The law also covers stockyards and commission merchants, the former being defined as any place, establishment, or facility commonly known as stockyards, conducted or operated for compensation or profit as a public market, while the latter is defined as a person engaged in the business of buying or selling live stock at a stockyard on a commission basis and a person furnishing such yard privileges. Stockyards of less than 20,000 square feet, exclusive of runs, alleys and passageways, are excluded from the law.

The Secretary of Agriculture is required to give public notice of the bringing of stockyards under the provisions of the law. Commission merchants, persons furnishing stockyard services, and dealers at yards coming within the act must register with the department their names, addresses and character of business, and must establish, observe and enforce just, reasonable and nondiscriminatory rates, and file with the Secretary and print and keep open to public inspection schedules of their rates and charges and any rule or regulation which in any manner may affect or determine any part of the aggregate of such rates or charges.

#### Schedules Fix Rate

They are forbidden to charge, demand or collect a greater or less rate or charge than is specified in the schedules filed and in effect at the time the services are rendered, and must not extend to any person any services except those specified in the schedules. Co-operative associations of producers however, may return to their members on a patronage basis, their excess earnings on their live-stock transactions. No changes can be made in the rates or charges except upon notice to the department and to the public, and then only

under the supervision of the department after hearing.

Failure to comply with the requirements and regulations or orders of the Secretary of Agriculture subject the offender to civil and criminal penalties and, in addition, are subject to a proceeding for damages by the person injured thereby. Dealers who violate any of the requirements applicable to them are subject to similar proceedings for damages. Such proceedings are enforced either by complaint to the Secretary or by suit in any district court, and any award made by the Secretary in such proceedings is made the basis of a suit in court.

#### Secretary May Establish Rates in Certain Cases

If, after hearing or independently, the Secretary is of the opinion that any rate, charge, regulation or practice of a stockyard owner, commission merchant, or person furnishing stockyard services is or will be unjust, unreasonable or discriminatory, he may determine and prescribe just and reasonable rates or charges and make appropriate orders to enforce them.

Whenever the Secretary, upon his own initiative or upon complaint of any person, including a stockyard owner, live stock commission merchant, or person furnishing stockyard services, after hearing finds that any rate, charge, regulation or practice causes any undue or unreasonable advantage, prejudice or preference between commerce wholly within the state and interstate or foreign commerce, or causes any undue, unjust or unreasonable discrimination against interstate or foreign commerce, he is required to prescribe the rate, charge, regulation or practice thereafter to be observed, to the end that such advantage, preference or discrimination be removed, any law, decision or order of any State or State authority to the contrary notwithstanding.

Stockyard owners, live stock commission merchants and others are forbidden to engage in any unfair, unjustly discriminatory or deceptive practice or device in connection with the receiving, marketing, buying or selling on a commission basis or otherwise, feeding, watering, holding, delivering, shipping, weighing or handling live stock, and the Secretary is authorized, after hearing, to order the discontinuance of any such practice or device.

#### Civil and Criminal Penalties in Addition to Damages

Persons who knowingly fail to obey the orders of the Secretary of Agriculture are subject to suit by the United States for the recovery of \$500 for each offense, and obedience to the orders is also to be enforced by injunction or other mandatory process of a court of equity. The orders of the Secretary are subject to judicial review.

Stockyard owners, commission merchants and others are also required to keep such accounts as will disclose all of their transactions, including the ownership of such business. If such accounts do not fully disclose such transactions, the Secretary is authorized to prescribe the manner and form in which they will be kept.

The powers of investigation heretofore exercised by the Federal Trade Commission with respect to stockyards owners, commission merchants and others mentioned are conferred upon the Secretary of Agriculture. Hereafter the Federal Trade Commission will exercise none of these investigational powers except upon the request of the Secretary.

#### Similar to Rail Control

This is the act which gives the government the same control over the meat industry as is exercised over the railroads by the Interstate Commerce Commission. But there will be no attempt to interfere with the legitimate operations of the packers and others affected by the law, but the present administration will attempt to enforce the provisions of the measure through co-operation with the industry rather than by arbitrary methods.



# Prohibition Don'ts For Manufacturers

## What to Do and What Not to Do Within Limits of National Dry Act

There has been much misunderstanding on the subject of the making of fruit juices at home and the role of the manufacturer of equipment and material in this connection. For the information of the public on this subject, the following statement has been prepared by the Prohibition Unit.

### A. B. C. OF VOLSTEAD

1. There is absolutely no legislative provision anywhere for manufacturing either intoxicating wine, cereal beverages, so-called home brew, or distilled spirits in the house or elsewhere for beverage purposes.

2. Commercial mills may press from home grown fruit non-intoxicating juices for private owners, provided the juice is removed to the home of the owner before it contains as much as one-half of one per cent of alcohol by volume.

3. It is unlawful for manufacturers to furnish malt extract with hops and clarifier for the manufacture of cereal beverages or malt liquor, except to persons holding permits under the National Prohibition Act, namely, dealcoholizing plants, industrial alcohol plants, and vinegar factories.

5. There are no property rights in material or equipment used in connection with the unlawful manufacture of liquor in the home or elsewhere.

### Definition of Terms

Non-intoxicating fruit juice can be made in the home. Intoxicating wine, home brew, and distilled spirits may not be made.

Two hundred gallons of non-intoxicating fruit juice may be manufactured tax free by head of family by registering with the Collector Internal Revenue.

This tax exemption provision has been the source of confusion. The effect of this is not to allow the manufacture of 200 gallons of intoxicating wine free from restrictions of the National Prohibition Act, but merely to allow the manufacture of 200 gallons of non-intoxicating fruit juices free of tax.

Section 1 of title II of the National Prohibition Act in effect defines the term intoxicating liquors as meaning all alcohol, brandy, whiskey, rum, gin, beer, ale, porter, and wine regardless of alcoholic content, and other liquors fit for beverage purposes, containing one-half of one percentum or more of alcohol by volume. Section 3 of said title provides that: "No person shall on or after the date when the eighteenth amendment to the Constitution of the United States goes into effect (January 17, 1920), manufacture, sell, barter, transport, import, export, deliver, furnish or possess any intoxicating liquor except as authorized in this act, and all the provisions of this act shall be liberally construed to the end that the use of intoxicating liquor as a beverage may be prevented." The same section provides in part that: "Liquor for non-beverage purposes and wine for sacramental purposes may be manufactured, purchased, sold, bartered, transported, imported, exported, delivered and possessed, but only as herein provided, and the Commissioner may, upon application, issue permits therefor. \* \* \*" Section 29 of said title, imposing penalties for violations of the act provides in part as follows:

"The penalties provided in this act against the manufacture of liquor without a permit shall not apply to a person for manufacturing non-intoxicating cider and fruit juices exclusively for use in his home, but such cider and fruit juices shall not be sold or delivered except to persons having permits to manufacture vinegar."

In view of the foregoing provisions of law, on June 3, 1920, prohibition mimeograph No. 84 was issued authorizing persons to manufacture non-intoxicating cider and other fruit juices exclusively for use in the home without permit, providing that such non-intoxicating cider and fruit juices are not necessarily limited to less than one-half of one per cent of alcohol by volume, but must be intoxicating in fact to be in violation of the National Prohibition Act.

### Mill Pressing for Private Owners

Such non-intoxicating fruit juices may be made at home from home grown fruit, or from fruit purchased for the purpose, or one may take fruit belonging to him to a commercial mill to have the juice expressed therefrom, provided the juice is removed to the home of the owner before it contains as much as one-half of one per cent of alcohol by volume. The possessor of fruit juices in the home such as cider thus made is at liberty to convert same into vinegar for home use or to sell same to permittees for conversion into vinegar.

Under the Revenue Act of 1918 fruit juices, other than apple cider, containing one-half of one per cent or more of alcohol by volume are taxed as wine. The same act exempts from tax 200 gallons of wine per annum manufactured by the head of a family provided he registers with the Collector of Internal Revenue for the district in the manner indicated by Treasury Decision 2765, but no exemption from tax is allowed unless the producer is so registered with the Collector of Internal Revenue and a permit is not issued by this office, or any officer of the government, for the purpose, none being required.

### Tax Exemption Causes Confusion

It is apparently this tax-exempting provision which has been the principal source of the confusion which has arisen. It has seemingly been supposed that the effect of the provision is to allow the production of 200 gallons of intoxicating wine for use in the home free from the restrictions imposed by the National Prohibition Act. The provision has no such effect. It relates to taxation solely and does not affect the restrictions imposed by the National Prohibition Act. Under the provisions of the latter act the 200 gallons of fruit juice which may be produced without payment of tax must, like any further quantity produced for home use without a permit, be non-intoxicating. There is no legislative provision anywhere for manufacturing either intoxicating wine, cereal beverages, so-called home-brew, or distilled spirits in the home or elsewhere for beverage purposes.

### Furnishing of Material Prohibited

Concerning the activities of persons supplying material and equipment for the production of liquor in the home, reference is made to section 18 of title II of the National Prohibition Act, which reads as follows:

"It shall be unlawful to advertise, manufacture, sell or possess for sale any utensil, contrivance, machine, preparation, compound, tablet, substance, formula direction, or recipe advertised, designed, or intended for use in the unlawful manufacture of intoxicating liquor."

Under this section it is illegal to furnish stills, parts of stills, worms or coils, malt extracts or syrups, unfermented fruit juices, such as grape must or any fermentable material, recipes or formulae for the manufacture of liquor for use in the home or elsewhere for beverage purposes.



It is a violation of this section to manufacture, sell, or possess for sale, except to a person holding a permit under the National Prohibition Act, malt extract with hops and clarifier for the manufacture of cereal beverages or malt liquor. The only persons issued permits by this office for the manufacture of cereal beverages are proprietors of de-alcoholizing plants, industrial alcohol plants and vinegar factories using the vaporizing process, all of whom may manufacture, commercially only, cereal beverages containing less than one-half of one per cent of alcohol by volume.

#### Absolutely No Home Brew

There is a widespread impression that it is legal to manufacture without a permit, in the home or elsewhere, beer, ale and porter, containing less than one-half of one per cent of alcohol by volume. Manufacturers of malt extracts and similar material endeavor to take advantage of this supposed condition of the law to sell such extracts or material for the manufacture by persons in the home of beer, ale, or porter, ostensibly to contain less than one-half of one per cent of alcohol by volume, but actually to contain a high alcoholic content. Such persons seek to hide their fraudulent objects by putting the recipe for the manufacture of liquor containing high alcoholic content in the shape of a warning not to follow a certain course because such course will produce a high alcoholic content, without of course deceiving any one as to the real intent.

Such persons are, as a matter of fact, mistaken as to the legal aspects of the situation. The law does not actually permit of the manufacture without a permit of beer, ale and porter, even though the alcoholic content be less than one-half of one percent by volume. Section 1 of title II of the National Prohibition Act provides: "When used in title II and title III of this act (1) the word 'liquor' or the phrase 'intoxicating liquor' shall be construed to include brandy, whiskey, rum, gin, beer, ale, porter, and wine, and in addition thereto any spirituous, vinous, malt, or fermented liquor liquids, and compounds, whether medicated, proprietary, patented, or not, and by whatever name called,

containing one-half of 1 per centum of alcohol by volume which are fit for use for beverage purposes." It is common to read the language "containing one-half of 1 per centum or more of alcohol by volume" as relating to and qualifying the preceding language "alcohol, brandy, whisky, rum, gin, beer, ale, porter and wine." However, under the correct reading of the statute, the language "containing one-half of 1 per centum or more of alcohol by volume" does not relate to the language "alcohol, brandy, whisky, rum, gin, beer, ale, porter and wine," but relates to and qualifies only the succeeding language "and in addition thereto any spirituous, vinous, malt, or fermented liquor, liquids, and compounds whether medicated, proprietary, patented, or not and by whatever name called, containing one-half of one per centum or more of alcohol by volume, which are fit for use for beverage purposes."

#### Property Rights Forfeited

The consequence of this is that all alcohol, brandy, whiskey, rum, gin, beer, ale, porter, and wine are intoxicating liquors, regardless of alcoholic content, and it is illegal to manufacture them without a permit. The liquors known by the general description of "home-brew" are either beer, ale or porter. Therefore, it is illegal to sell material whereby so-called home-brew may be made in the home, even though the alcoholic content of the beverages is intended to be less than one-half of one per cent by volume.

No property rights exist in the materials, malt extract, grape must, stills, etc., intended for use, or for sale for use, in the manufacture of liquor in the home or elsewhere, in violation of the National Prohibition Act or in the liquor made therefrom, and the same may be seized and forfeited under section 25 of title II of the act.

It will be seen from the foregoing that this office has not issued permits for the manufacture of wine, home-brew, distilled spirits, or any other intoxicating liquors for beverage use in the home or elsewhere and under the law cannot issue such permits.

### Western Fruit Growers Request Modification of Packers' Consent Decree

Alleging that great losses will be suffered through the operation of the so-called packers' consent decree, which restricts the business activities of the big packers solely to the meat industry, the California fruit growers have entered a protest against it before the Supreme Court of the District of Columbia.

The California growers ask for a modification of the decree so as to permit the packers to handle fruits on their refrigerator lines. The various grocers' associations have entered the case, but in opposition to any modification of the decree. It is doubtful, however, whether these organizations will be allowed to interplead.

All parties interested in the petition of the Western fruit growers for modification of the packers' consent decree, which is now before the Supreme Court of the District of Columbia, will be given an opportunity to appear before officials of the Department of Justice to submit their arguments for and against the proposed modification. The hearing will be before a committee composed of representatives of the Departments of Justice, Commerce and Agriculture, those of the last two departments serving in an advisory capacity for the purpose of making such recommendations as they may believe will be helpful.

The Supreme Court of the District of Columbia has indicated that it will not permit the wholesale grocers to interplead and become parties to the decree, but representatives of the various grocers' organizations have announced that they will make an effort to convince the Department of Justice that their interests are considerably affected by the matter.

No date has yet been set for the hearing before the committee, but it has tentatively been set for the latter part

of this month or early in November. Following the conclusion of the hearings, which are expected to take two to three weeks, the Department of Justice will prepare an official recommendation to the court for disposition of the fruit growers' request.

The position of the Government, as opposed to the request of the grocers to intervene, was based on the belief that only the Government should prosecute a case begun by it in behalf of the people. To permit private interests to join in the suit in aiding the prosecution of the suit by the Government was declared to be improper.

"If this intervention is permitted," the department declared in urging the court to reject the application of the Wholesale Grocers, "many other interests could easily conceive and imagine as great an interest in this suit and its final outcome. Such, for example, would be the producers as well as the canners of fruits and vegetables, those operating the stock yards, the live stock commission men, producers of live stock, live stock growers' association, farmers' organization, wholesale grocers and other interests.

"The decree in this case," it was said, "is rendered upon consent and private interests cannot be permitted to intervene and avail themselves of the benefit of such consent and to do away with the necessity of proof by them upon the facts alleged in the bill.

"The intervention here requested is not authorized by law, but is absolutely contrary to law; that to permit it would cause an anomalous situation in this case and would render its final completion almost impossible, if it would not be fatal to the decree itself; that it would create a precedent contrary to law and very detrimental to the enforcement of the anti-trust laws."



# The Present Status of Nutrition

## The Water Soluble Vitamine B—What it is, Where it is Found, and How it Acts

By Victor K. LaMer, Ph.D., Department of Chemistry, Columbia University\*

THE term vitamine B arose in the following manner: Eijkman, as stated in the preceding number of this series of articles, demonstrated in 1897 that the feeding of fowls upon an exclusive diet of polished rice resulted in the development of a disease (polyneuritis gallinarum) which resembled beriberi (polyneuritis) very closely, and further that this disorder could be cured by the simple addition of rice polishings to the diet. These results were extended by the American workers Fraser and Stanton, and Chamberlain and Vedder to human beriberi, and they led to the discovery that an alcoholic extract of rice polishings was highly curative. Building upon this experience Funk announced in 1911 that he was able to purify this material to a point where the crystalline product obtained possessed a potency such that as little as 2-15000 of an ounce sufficed to cure a pigeon suffering from polyneuritis within a half hour following its injection.

At that time Funk considered his material chemically pure and named it "vitamine." While Funk has not always been able to repeat his purification with such singular success as he did in 1911, nevertheless he has been able to procure substances of marked activity. Somewhat later Prof. McCollum, then at the University of Wisconsin, demonstrated that there were two kinds of vitamins: namely, a type soluble in fat solvents, discussed previously as vitamine A, and a second type soluble in water which he proposes to call water soluble B.

### Detecting Polyneuritis

If we accept the view advanced by McCollum that Funk's antineuritic vitamine and his water soluble B are identical, then two methods exist for detecting this material. The first method consists in feeding a pigeon a diet of polished rice until the nervous disorders typical of polyneuritis, such as unsteadiness of gait, twitching of muscles, twisting of the neck, and finally paralysis leading to death, appear. If the addition of any foodstuffs will prevent or cure this disorder it is considered that the foodstuff contains vitamine B.

The second method is similar to the first except that rats are used, and the maintenance or recovery of normal growth is made the principal criterion for the presence of the vitamine. In the latter case the basal diet for rats consists of purified protein (casein or meatscraps), butter fat to furnish vitamine A, starch, and a salt mixture. On such a diet rats grow well for one or two weeks after which a very rapid decline sets in. The addition of as little as 0.2 gram of dried yeast per day or about 1 gram of a leafy vegetable results in an immediate stimulation of growth approximating that of the normal animal.

A third method, involving the measurement of the acceleration in rate of growth of yeast cells has been proposed because of the rapidity and economical manner with which it may be conducted (Williams, R. J., J. Biol. Chem. 38: 465, 1919; Eddy and Stevenson, *ibid.* 43: 295, 1920; Funk and Dubin, *ibid.* 44: 487, 1920). While this method has been enthusiastically proclaimed by some of its adherents to be equal to either of the classical feeding methods where rats or pigeons are used, it has been seriously ques-

tioned by a number of workers (Emmett and Stockholm, *ibid.* 43: 287, 1920; Souza and McCollum, *ibid.* 44: 113, 1920; Fulmer, Nelson and Sherwood, J. Am. Chem. Soc. 43: 186, 189, 1921) whether the accelerated yeast growth is due to a vitamine addition or to improvement in the imperfections of the culture medium which have been neglected by the advocates of the yeast method. These deficiencies may be organic or inorganic or both. It is well, then, to reserve judgment on the yeast method until it has been shown that yeasts cells need vitamine B in as conclusive a manner as has been shown to be the case for pigeons and rats (Eddy, Heft, Stevenson and Johnson, J. Biol. Chem. 47: 249, 1921). For that reason the details of the proposed methods will not be given here. McCollum was led to the view that the antineuritic vitamine and his water soluble vitamine B are identical since water extract of plant tissues, yeast cells and some glandular organs yield positive tests both by the rat and the pigeon method (McCollum and Kennedy, *ibid.* 24: 491, 1916).

The most convincing evidence that the antineuritic vitamine and the water soluble growth promoting vitamine may not be identical has been presented by Emmett and Luros (Emmett and Luros, *ibid.* 43: 265, 1920). They state that the antineuritic substance in unmilled rice, when tested by the pigeon method, is stable to heat at 120 degrees Centigrade and 15 pounds pressure for one hour. It is partially altered by heating in the air oven at 120 degrees Centigrade for 2 hours, and totally destroyed at 120 degrees Centigrade and 15 pounds pressure in 2 and 6 hours. The vitamine extracts are destroyed more easily. The water soluble B vitamine in unmilled rice, i. e., the material which is detected by rat feeding, appears to be stable to heat at these same temperatures. Whether this vitamine was slightly destroyed could not be definitely ascertained due to lack of quantitative methods.

Throughout this article I shall follow the usual custom of denoting either the antineuritic vitamine or the water soluble growth promoting accessory by the term vitamine B, keeping in mind, however, that the consequent assumption of identity has not been proven to the satisfaction of all prominent workers.

### Occurrence of Vitamine B in Foods

Vitamine B is widely distributed throughout the vegetable kingdom. This applies in particular to the leafy portions of the plant and to a lesser extent to the root and fruit portions. The bran coating of grains, milk, and those glandular organs like the liver and pancreas where an active metabolism is going on also contain it.

The foods which are conspicuous because of absence of vitamine B are the highly purified or refined products such as patent flour, animal and vegetable oils, sugars and muscle tissue.

Osborne and Mendel (Osborne and Mendel, *ibid.* 41: 451, 1920, and earlier articles) on the basis of extensive rat feeding experiments find that yeast is the richest known source and that of the following products tomato was next, i. e., gram daily doses of tomato promoted good growth. Spinach, cabbage, turnip and carrot were not widely unlike in their comparative potency and were roughly equivalent to half the same quantity of tomato or one quarter that of yeast. Beets were not as good. The potato was

\*The writer wishes to acknowledge his indebtedness to Professor Sherman for placing at his disposal an advance copy of the latter's article on vitamins which is to appear in the October number of "Physiological Reviews."



as rich as some of the other roots but similar quantities of the leguminous hays, alfalfa and clover or tomato promoted more rapid growth.

Of the fruits, it is known that oranges, lemons and grapefruit contain vitamine B. Their potency, according to Osborne and Mendel Suguira and Benedict, *ibid.* 40: 449, 1919), is quite similar in this respect to equal volumes of cows milk, and the efficiency of these fruit juices is not lost by suitable methods of dessication.

#### Where To Find Vitamine B

A sample of a well known grape juice preparation tested less than equal volumes of the fruit juices just mentioned. Apples and pears furnish some vitamine B, but the quantity required to supply the diet in this respect is so large that they cannot be regarded as rich in this factor. Prunes were somewhat richer. Suguira and Benedict's data (Suguira and Benedict, *ibid.* 40: 449, 1919) for bananas show that this fruit is a relatively poor source.

Nuts like the English walnut, almond, filbert, hickory, pine nut, chestnut or pecan are sources of abundant quantities of vitamine B according to Cajori (Cajori, *ibid.* 43: 583, 1920). The peanut is likewise a member of this class.

The exact status of milk has been a matter of considerable investigation, and while the later work has shown that milk is not the rich source that Hopkins' early experiments indicated, it is nevertheless one of the better sources of vitamine B. It is generally conceded that the cow does not manufacture vitamins but only concentrates them for human use from less palatable and more bulky sources. For this reason it can be expected that the vitamine content of the milk will be influenced by the quality and type of food fed.

#### Solubility and B Vitamine

In its physico-chemical characteristics, vitamine B is primarily water soluble, but this is not its exclusive solubility, for it is very readily extracted by 70 per cent alcohol (Unpublished experiments performed in Prof. Sherman's laboratory). It is even soluble to some extent in oil. Alkalis seem to render it less stable to heat treatment, and for this reason it is believed that the use of biscuits baked with soda is not as nutritious as when the flour is used to make raised bread. Some authors consider the almost exclusive use of soda biscuits to be an important contributing factor in the incidence of pellagra in certain sections of the south.

At one time it was thought that the process of canning and dehydration were without effect upon the vitamine B content of foods. It has since been shown by the use of

more exact methods that while the B type is very stable when compared with the C type, yet a certain amount of loss does occur upon heating.

Chick and Hume's (Chick and Hume, *Proc. Roy. Soc. London B*, 90: 60, 1917) experiments show that when wheat germ is heated two hours at the boiling point of water (100 degrees Centigrade) the loss of vitamine is not appreciable, but that as much as one half appears to be lost after forty minutes heating at 113 degrees Centigrade, and still more at higher temperatures (118-124 degrees Centigrade). Ordinary cooking then should be without effect, but the same cannot be said for pressure sterilizations at high temperatures. Less definite information is available regarding dehydration, but the excellent nutritional results obtained by various investigators using dried foods for purely qualitative tests indicates that no very marked losses have occurred, but it must be kept clearly in mind that this applies only to vitamine B and not to vitamine C, which is quite susceptible to heating processes and especially to those process in which either an oxidation or a reduction reaction may occur (LaMer, *Physical Chemistry of Vitamines*, in press).

#### Effects of Cooking

It is very unfortunate that Miss Miller's quantitative experiments (Miller, *W., J. Biol. Chem.* 44: 159, 1920) on the effects of cooking were performed exclusively with the yeast method without the simultaneous control of rat feeding tests. The particular method which she used involved counting the number of yeast cells produced from a single cell after 18 hours incubation when vegetable extracts were added to the culture medium. Her results are given below in the hope that further research may prove that the yeast method really measures the material for which it is intended; namely the substance which promotes growth and protects man against beriberi.

Carrots cooked 30 minutes at 100 degrees Centigrade showed no reduction in activity, neither was there any destruction when they were packed tightly in a jar and heated at 115 degrees Centigrade for 45 minutes. Navy beans cooked for 30 minutes at 120 degrees Centigrade showed a decrease of 40 per cent. In this case the beans were somewhat overcooked. When they were cooked in 0.5 per cent sodium bicarbonate solution for 1 hour and 10 minutes a loss of 37 per cent ensued. She notes that a very large proportion of the active material was present in the cooking water. Miss Whipple (Whipple, *ibid.* 44: 175, 1920), using the same method, finds that cabbage is not affected by boiling for 30 to 60 minutes.

## Price and Exchange Activities of Trade Associations

The Federal Trade Commission recently issued the following summary of information secured from trade associations. Such a statement is particularly interesting at this time in view of the recent statement of President Harding's unemployment conference that high costs due to "malignant combinations" are strangling home building in this country.

The commission sent out 2,750 questionnaires to trade associations in response to a request for information from the chairman of the joint commission of agricultural inquiry of the United States Congress. Replies were received from 1,773 showing the following activities:

Associations collecting and exchanging price information .....	141
Associations compiling and distributing other statistics .....	376
Non-statistical associations .....	768
Inactive or disbanded .....	161
Incomplete replies .....	227

According to the information supplied by the associations, there were 141 out of a total of 1,773 sending in

replies to the questionnaire, which distributed or exchanged information regarding prices in closed transactions. Nine associations indicated that they had recently discontinued the collection and exchange of information regarding their selling prices, pending the decision of the United States Supreme Court in the *Hardwood* case. It appears probable that a number of others which formerly used open price methods had taken similar action.

The associations exchanging price information among their members were largely manufacturers and wholesalers, and they covered a very wide range of products, such as agricultural products, automobiles and trucks, bread and bakery products, brick, buttons, canned fruits and vegetables, clothing, coal, coke, cotton goods, dairy products, drugs, farm implements, flour and feed, furniture, gas ranges, groceries and meats, hardware, iron shingles and lumber products, plumbing materials, salt, shoes, silks, upper leather and numerous other products.

In most cases the price information was distributed among the members at frequent intervals, i. e., daily, weekly and monthly, depending largely on the character of the business.



# History of Food Preservation

## Nicholas Appert Discovered How to Can Foods Before Principles of Putrefaction were Understood—Canning Introduced in America

By E. M. WOLFF

THE preservation of food has been of interest from the earliest times. Although there have been many modifications, yet there have been only four common methods. These are by drying, by the addition of preservatives, by the action of low temperature and by the action of high temperature. From the third method has been developed our modern cold storage systems and from the last mentioned our process of canning.

It is interesting to note that canning as a method of arresting putrefaction in food was evolved before the cause of decomposition had been demonstrated.

Putrefaction, as a scientific problem, began to be of interest as far back as the middle of the seventeenth century. Leeuwenhoeck, by means of a lens which he had perfected, observed what we now believe to be bacteria. He observed these organisms in water, in the mouths and intestines of animals, but made no attempt to explain their origin or function. Spallanzani in 1769 connected the presence of these organisms with putrefaction and showed that if infusions of decomposable matter were placed in flasks, then boiled and the flasks hermetically sealed, putrefaction would not take place. Furthermore that no living organisms could then be demonstrated. It was Spallanzani who first gave us the principles of sterilization by heat and pointed the way to preventing decomposition in this manner. From the time of his original experiments until the middle of the nineteenth century little progress was made.

The work of Tyndall and Pasteur gave the final evidence that putrefaction was due to minute living organisms and not to oxidation changes alone, as many scientists had supposed, being influenced by the work of Gay-Lussac. Tyndall in his studies on the floating matter in the air proved conclusively that it was these organisms in the air and not the air itself, which brought about decomposition. He and Pasteur were able to demonstrate that living organisms could always be found where fermentation and decay were taking place. That these organisms could be killed by heat and that if decomposable matter which had been sterilized by heat was kept so that no organisms could gain entrance, it would keep indefinitely without any evidence of spoilage.

However, these principles of sterilization—heating to kill the organisms and excluding air to prevent subsequent contamination—were applied to the preservation of food some time before they were understood. It was a confectioner, Nicholas Appert, who first devised a method for the indefinite preservation of food by the application of these little understood principles.

### Appert Won Prize for Discovery

During the Napoleonic wars the problem of supplying the army and particularly the navy with suitable food became so acute that the French Government offered a reward of 12,000 francs to the person who could invent the best method of preserving food. Appert was stimulated by patriotic motives and this offer to devote his time to the solution of the problem. He was a confectioner, and from his experience in this field, together with his work as assistant to his father, who was a wine merchant, he was exceptionally well fitted to undertake the task. For some years he worked without much success. Finally in 1809 he discovered a method which was so successful that he felt justified in submitting it to the Minister of the Interior. The minister appointed a commission to investigate the process. The commission numbered among its members many men of note among whom were Bardel, Gay-Lussac,

Scipion-Perier and Molard. This commission or "Bureau Consultif" examined a number of different substances—meat, soup, vegetables, milk and fruits (which he had preserved) and reported that when the jars were opened after a period of several months, the foods were found to be perfectly preserved and in every way satisfactory in appearance and flavor. On the strength of this report the Minister of the Interior wrote M. Appert praising his discovery and awarding him the prize of 12,000 francs in recognition of his services to the government. The only condition imposed was that Appert should, at his own expense, publish his discovery and make known his method of preserving foodstuffs. The following year—1810—Appert published his discovery under the title of "L'Art de Conserver pendant plusieurs toiles les substances animal et vegetables." This treatise describes at length Appert's process. It is of great interest even today, for the essential principles of the process of canning are the same now as they were in 1810. The improvements, which have been made since that time, have been in methods but not in principle.

M. Appert tells us that his method consists of four things: (1) Placing the foodstuffs to be preserved in suitable containers; (2) Sealing the containers with greatest of care, for as he says "it is principally on the operation of sealing that the success of canning depends;" (3) Subjecting the substances thus sealed to the action of boiling water for a period of time, varying according to the nature of the foodstuff; (4) Taking them from the bath at the prescribed time in a proper manner.

### Used Only Glass Jars

In his experiments at this time M. Appert used only glass jars. This material he selected as the most impermeable to air and says that up until the time of his first publication he had not experimented with other materials. In a later edition of his book—1843—he discusses metal containers and enumerates the great difficulties which the makers of containers encountered in the use of metals. The glass jars were manufactured especially for him, as those on the markets had necks, which were too narrow, and as a rule were not capable of withstanding the action of boiling water and the pressure from within. The jars which Appert used were of the finest material and the best workmanship. They were always carefully examined and cleansed before being used. The corks as well as the jars were chosen with care. These, too, were of the finest quality, as the sealing of the jar was considered the most important step in the process of preserving. The corks were rolled for about three-quarters of their length to make them firmer and less porous.

In regard to the material to be preserved Appert made very careful selection. Only the finest products were used. They were cleansed thoroughly and cut up into sizes which would comfortably pass through the neck of the jar. When this was accomplished the jars were sealed by the following process, which is described by M. Appert very much in detail. The cork was driven into the neck of the bottle by sharp blows of a hammer and was supposed to go at least three-quarters of its length into the bottle. To make quite certain that the pressure from within should not drive the cork out Appert used a device of his own invention. It consisted of a piece of wire from 22-24 cm. long. At about the middle of the wire a circle was made large enough to slip over the neck of the bottle. A half turn was made with one end so that the two ends were directly opposite each other.



This loop was slipped over the neck of the bottle and drawn tight. The two ends were then brought up over the cork and twisted tightly together. Two such loops were usually used in such a way that the wires formed a cross over the top of the cork.

The jars, after being sealed, were placed in a bath filled with fresh water. The bath was covered to prevent evaporation as much as was possible, and the water in the bath came to the neck of the jars. A flame was then applied to the bath. Time was recorded from the moment that the water in the bath began to boil and the different substances were subjected to the action of the heat for varying periods of time. These periods of time were determined empirically. At the end of the prescribed time the flame was removed from the bath and 15 minutes afterward the water was let out of the bath. Half an hour later the bath was uncovered and within one or two hours the jars were removed. At this time the jars were examined very carefully and any that showed the slightest imperfection discarded.

#### The Principles Appert Discovered

M. Appert explained in his paper that the success of his method depended upon two things: heating and the absolute exclusion of air. The principle, he said, is invariable in its results, if it is carried out correctly. Failure may be due to insufficient heating or imperfect exclusion of air through careless sealing or faulty containers. He believed "that heat has the property not only of changing the combination of the particles, which go to make up all foodstuffs, but also, if not destroying, at least arresting for several years, the natural tendency of these foodstuffs to decomposition." In conclusion he said: "After the publication of all the experiences, which have just been set forth in detail, we see that this new method of preservation is based upon one principle only—the application of heat to a degree suitable to the different substances after having excluded them as much as possible from all contact with the air. At first glance we would believe that a substance which had been first cooked and then placed in jars, which were perfectly sealed, would be preserved equally well without the application of the hot water bath; this would be an error for all the experiments, which I have made, would demonstrate to me two essential points: (1) That absolute exclusion of air from the outside (that which we find inside need not trouble us as it is made ineffectual by the action of heat) and (2) that the application of heat by the water bath, are both indispensable for the perfect preservation of foodstuffs."

The importance of the absolute exclusion of air after the foodstuff has been placed in the jars is emphasized over and over again. "One cannot pay too much attention to sealing successfully, no extra care should be neglected in order that the substances one wishes to preserve should be kept absolutely from contact with the air, since that is the destructive agent most to be feared."

M. Appert applied his method in preserving meats, vegetables, soups, fruits, even milk, tea and coffee. He gives careful directions for the different modifications of his method, which must be made for the different foodstuffs. Meats and vegetables, especially green peas, he found most difficult. Fruits were comparatively easy.

In summing up his work the author said: "Such an invention should enlarge the domain of chemistry and should become a common good to all nations, which are thus enabled to preserve the most precious foods"—a prophecy which has more than been fulfilled. He simply accepted the fact that air was the agent, which seemed to cause putrefaction. He was not a scientist and made no attempt to explain his observations from a scientific point of view. Gay-Lussac, however was commissioned by the French Government to investigate the process and reported that decomposition of food was due to a series of oxidation changes. This opinion was generally accepted, and it was not until the experiments of Tyndall and Pasteur demonstrated beyond question that living organisms contained in the air were the real cause of putrefaction, that the spoilage of food was understood.

#### Art of Food Preservation Spread Rapidly

From the time of Appert the art of preserving of foods by the application of heat and the exclusion of air spread rapidly. In England it was introduced in 1810 by Peter Durrand, who learned the process supposedly from Appert, while the former was traveling on the Continent. In America it was introduced by Thomas Kensett and Ezra Daggett in 1819. The process used by these two men was Appert's. Certain modifications were introduced as time went on. Metal containers gradually came to take the place of glass jars. After 1810 Appert himself experimented with metal containers. The results at first were unsatisfactory because of the difficulty of obtaining metal free from defects and workmen skilful enough to make the cans sufficiently strong to insure against leakage. The cans were cut by hand and soldered together. Every canning establishment had to have a capable tinsmith, who understood his work and was able to direct workmen. The English and French manufacturers suffered enormous losses in the early years of canning through defective cans, but they felt that the advantages of the can over glass jars would be so great that they continued to experiment until a satisfactory form was evolved. The round can was found to be more practical than the square can, as it could be made with fewer seams and packed away more economically.

About 1850 a press for the manufacture of can tops was invented and between 1877 and 1886 many attempts to introduce machinery into the canning industry were made, but successfully resisted by the employees. In 1883 a hand capping machine was introduced, and from that time machines for all operations gradually took the place of hand labor.

#### New Regulations on Mixed Flour

New regulations defining mixed flour have just been issued by the Commissioner of Internal Revenue, amending articles 1 and 2 of Regulations 25.

Article 1, as amended, now provides that "the term 'mixed flour' includes (1) any milled food product containing more than 50 per cent of wheat or wheat flour and any quantity of any other grain or the product of any other grain or any other material except such material not itself a product of grain as is commonly used for baking purposes, regardless of the name under which it is known or under which it is sold or offered for sale, and (2) any milled food product composed of wheat or wheat flour in a proportion not exceeding 50 per cent and any other grain, or the product of any other grain which is intended for sale, or sold or offered for sale as 'wheat flour' or merely as 'flour' without descriptive prefix; but does not include mixtures containing not more than 50 per cent of wheat or wheat flour sold (1) as mixtures of wheat or wheat flour and other grain or the product of other grain or substitute therefor; (2) as the product of some grain other than wheat or (3) under some special distinctive or descriptive name not indicating the product to be 'wheat flour' or 'flour.'"

In amended article 2 it is held that the addition to wheat flour, either in milling or afterwards, of baking powder, yeast, phosphates, or other substances or materials commonly used for baking purposes and not derived from any grain, does not constitute the product "mixed flour" within the meaning of the act.

#### New Regulations on Renovated Butter to be Published Soon

New regulations on renovated butter are now being prepared by the Commissioner of Internal Revenue to comply with the recent decision of the Attorney General that butter made from cream neutralized by the use of lime does not come within the scope of the law of 1902.

The new regulations which will define the bureau's operations under the latest opinion will be ready in about a month, it is stated.



# QUESTIONS AND ANSWERS

## On Problems of Nutrition and Diet for Dietitians and Domestic Science Teachers

Conducted by B. M. Baldwin

*A multitude of things go to make up the mental equipment of the successful dietitian and home economics teacher. Chief among these is the latest information which science or business gives about any one of the many aspects of food and feeding. And how many sides exist to food and feeding no one realizes better than the busy dietitian or teacher. To direct successfully the dietary department of an institution, to feed efficiently people in commercial lunch rooms and restaurants, to buy economically food supplies in an ever changing market, to keep the daily classes busy with the schedule of subjects to be covered in the school term—all this demands the entire time so that none is left to devote to keeping up-to-date with scientific and technical progress. And yet former training, excellent though it was, will avail little unless it is supplemented continually by newer knowledge.*

*Questions come up to the dietitian daily: What is the effect of a certain food (oleomargarine, dried milk, etc.) in the general diet? Can a given commercial product be used in diseased conditions? What are the significant points in manufacturing or handling new foods? How are the vital elements in foods—vitamines,*

*for example—influenced by the processes of preparing for the market? What care is exercised to insure purity and wholesomeness? The teacher wants to know the processes of manufacture and handling; the economic situation as regards food; the laws controlling the manufacture and sale. She is interested in obtaining pictures and charts to use as illustrative material.*

*Reference books will not always supply the data wanted since the progress of discovery and research in food and feeding outruns any revision of books. To take and read all the magazines and journals that touch on the subject is obviously impossible from the point of time and money. Information about what is new in the field should be brought to the attention of those interested in food and nutrition. The American Food Journal is prepared to supply the need by acting as a clearing house for current information—answering specific questions and problems that come in from its readers, suggesting items of interest, and indicating literature that will be of special value. Readers are invited to send in questions to be answered in this department.*

## Diets and Diseases

A REQUEST has come to us from the chief dietitian of a California hospital for information on "the latest theories and experiments in regard to diets in relation to various diseases."

In this connection a review of Dr. Robert McCarrison's *Studies in Deficiency Diseases* will be of value (Oxford University Press, 1921). McCarrison has carried on studies in India as an officer of the Indian Medical Service. During the war he had the opportunity of observing the results of deficient diets in the army and among civilians. His experiments and observations have been summarized, and his conclusions as to their practical application will be suggestive. His method was "to observe the more general symptomatic and pathological effects of faulty food in the animal body as a whole, and ascertain what forms of human illness might reasonably be attributed to it." The experiments with pigeons, guinea pigs and wild monkeys are described, and the pathogenesis of deficiency diseases discussed.

His summary of the functions of vitamins is worth quoting entirely.

"(1) Vitamins are constant constituents of living tissues. Although present in very small amounts, maintenance of health is dependent on their action.

"(2) Vitamins do not themselves contribute to the energy supply of the body but facilitate utilization by it of proteins, fats, carbohydrates and salts of food.

"(3) Proteins, fats, carbohydrates and salts cannot support life without vitamins, nor vitamins without these proximate principles; they are complementary to each other. Without vitamins, the body starves.

"(4) A distinct relationship exists between the amount of vitamin required and the balance of food in protein, fat, carbohydrate and salt, the efficacy of the vitamin depending on the composition of the food mixture.

"(5) A distinct relation exists between the amount of vitamin required and the rate of metabolic process.

"(6) Each vitamin plays a specific part in nutrition.

"(7) It appears that vitamin A is associated with the metabolism of lipoids and calcium, as well as with chemical reactions requisite for growth and maintenance.

"(8) Vitamin B appears to be associated with the metabolism of carbohydrates and with the chemical reactions and functional perfection of all cells, particularly nerve cells.

"(9) Vitamin C appears to be associated with the metabolism of calcium and with the chemical reactions of growing tissues.

"(10) All vitamins are concerned in the maintenance of orderly balance between destructive and constructive cellular processes.

"(11) One vitamin cannot replace another although its function may be interfered with by the absence of another.

"(12) The final result of their efficiency is the same whatever be the degree of deprivation, the greater the deprivation the more rapid is the onset of symptoms due to it, the lesser the deprivation the slower is the onset of the symptoms due to it.

"(13) Each vitamin exercises a specific influence on the adrenal glands; the effect of their deprivation on these organs is one of the most outstanding features of deficiency diseases.

"(14) Vitamins influence markedly the production of hormones and all external secretions.

"(15) There is reason to believe that the capacity of any given cell for work is impaired in proportion to the degree of vitamin starvation.

"(16) Vitamins aid the tissues in resisting infection.

"(17) Vitamin, especially vitamin B, induce in the human and animal body a desire for food.

"(18) Vitamins are one link in the chain of essential substances requisite for harmonious regulation of chemical processes of healthy cellular action. If the link be broken, harmony ceases or becomes discord as it may cease or become discord if any other link be broken.

"(19) The place of vitamins in human economy must be considered in connection with metabolism as a whole: in connection with their relation to other essential food requisites, with their relation to organs of digestion and assimilation, and with their relation to endocrine regulators of metabolic processes.

"Vitamins are the spark which ignites the fuel mixture of



a petrol-driven engine, liberating its energy; a spark of no use without fuel, nor fuel without spark—nay, more, the efficacy of the spark is dependent in a great measure on the composition of the fuel mixture.

“What happens [when the body goes sick in consequence of deficient foods, usually ill-balanced] is this—in the absence of vitamins or in an inadequate supply, protein, fat, carbohydrate and salts are not properly utilized; some largely wasted, others yield products harmful to the organism. In these circumstances, life may be sustained for a longer or shorter period, during which the body utilizes its reserve stores of vitamins and sacrifices its less important tissues to this end. But there is a limit beyond which such stores cannot be drawn upon, and once reached, the cells of higher function—secretory, endocrine and nerve cells—begin to lack vigor and depreciate in functional capacity although the tissues may still hold considerable stores of vitamin. The disintegration process is delayed or hastened, lessened in severity in one direction or increased in another according as the food constituents are well or ill balanced and according to the character of lack of balance.

#### What Lack of Vitamins Does

“The lack of vitamin disturbs the calcium metabolism; puts an end to regenerative process; involves with respect to the cells of higher function, the functional depression of many, death and failure of few. The cardinal effect is depreciation of cellular function, and this depreciation is the foundation upon which disease is built. Extreme deprivation means rapid dissolution and death; partial deprivation means slow dissolution and disease.

“This conception of the function of vitamins holds our wide promise in the cure of disease, due to or favored by their deficiency in food; for though they cannot restore to life cells already dead, they can restore to normal depressed functional capacity of the general mass of body's cells. The conception that vitamins provide the cells of the body with the power—one might almost say will—to work, has this great merit that it furnishes a working hypothesis on which to frame treatment.”

The last part of the book deals with practical application to definite diseases including dietetic treatment. The author does not touch on scurvy, rickets and dental disorders as his experiments did not cover those conditions. As his observations on pigeons and monkeys showed universally disorders as diarrhoea and dysentery, McCarrison considers the acute gastro-intestinal disorders in humans to be due to the same cause—namely an ill balanced diet with lack of vitamins.

#### Vitamins and Babies

For example he puts infantile diarrhoea in this group. This conclusion is supported by practical experience during the war. In Belgium the mortality fell from 227 in Brussels and 410 in nearby districts in 1913-1914, to 60 and 89 respectively in 1918. During this time mothers were encouraged to nurse their children and were given supplementary foods from the fifth month of pregnancy to ninth month after birth. Bottle fed babies were given milk and a nutritive cocoa to their second year. The therapeutic value of fruit juices in infantile diarrhoea is well known, especially those rich in vitamins.

Medical men in the tropics know that the micro-organism of amoebic dysentery can live in the human intestine without development of the disease—the development being favored by food deficiency and prevented by well balanced food with vitamins. Ill-nourished, poisoned and imperfectly functioning tissues will permit infection. Therefore to avoid and overcome dysentery, a diet rich in vitamins as well as adequate in other respects should be given. He warns against the usual invalid foods given, which are dangerously deficient in vitamins.

#### Jail Dysentery

Jail dysentery is due to ill-balanced foods. As early as 1865, a physician of the Indian Medical Service said, “I never hear of an increase in bowel disorders in jail without suspecting tampering with the food, or privation in the

districts furnishing the prisoners.” Experiences in the late war confirmed this opinion.

The linking up of chronic gastro-intestinal disorders with vitamin deficiency is suggested by the fact that badly fed prisoners of war had the same symptoms as experimental monkeys—large abdomen, short breath, constipation and inability to do moderate work even walking. In the case of gastro-intestinal dyspepsia, a man of sixty having been ill twenty years recovered normal digestion and evacuation in a few months when given vitamin extract and vitamin rich foods. Prior to taking the vitamin extract the stools were white, offensive and loaded with fatty acids but became normal with the treatment, showing the vitamin in a readily absorbable condition promoted bile and pancreatic secretions.

#### Effects of Sterilized Food on Children

Mucous disease of children, gastro-intestinal catarrh, is common among children fed sterilized, artificial and refined foods. The condition is amenable to dietetic treatment, yielding to an increased vitamin and decreased carbohydrate diet.

Colitis is a cardinal symptom of vitamin deficiency, whether of B only or of all three, and recovery is assisted by proper diet. Coeliac disease is not seen in breast-fed children, but may appear from the ninth month to the second year. Kittens on a deficient diet show similar symptoms. The disease is treated successfully with a vitamin rich diet. Chronic intestinal stasis is due to atrophy of muscular tissue and disordered function or actual degeneration of nervous tissue resulting from a vitamin-free diet. Experiment with ill-balanced foods result in gastric and duodenal ulcer, so these are probably caused by lack of vitamin. Intussusception occurs in experimental monkeys and was frequently seen in German children during the very lean years of the war. It is safe to say that children who are properly fed are less liable to suffer from the condition.

In the case of pellagra, McCarrison believes that the vitamin restores the endocrine and digestive functions so that protein is utilized. Both the vitamin and protein in proper amounts are needed for normal process. He believes that in beri-beri we have two different diseases—one due to deficiency of vitamin and a poorly balanced diet; a second due to infection; or a case of the two combined.

Congestion of the bladder and certain abnormalities of micturition seem to be a pre-scorbutic state. The relation between endocrine organs and vitamins is close—vitamins resemble hormones in their action of stimulating the organs. “Functional perfection and correlation of endocrine organs depend on properly balanced and vitamin containing food supply, and dietetic deficiency means endocrine insufficiency.” Pancreatic insufficiency may also be due to lack of vitamin.

#### Mental Disorders Attributed to Vitamin Dearth

During the war medical men in Germany were disturbed by the increasing number of cases of amenorrhoea. As experimental animals show similar symptoms in reproductive organs, this widespread condition was doubtless due to lack of vitamin foods. The same is true of malnutritional oedema, which can be produced by lack of A. Mental disorders as headache, mental confusion, lack of concentration, difficulty of speech and loss of memory are linked up with the vitamin, as the brain varies considerably in weight and possibly in size with the food composition.

In all the cases that McCarrison found the disease following a diet faulty in vitamin as well as general balance, he suggests that a proper diet will not only prevent but also overcome the condition. Hospital dietitians will need to consider the vitamin content of the diets, especially in those diseases in which certain foods are prohibited; institutional dietitians will want to watch the menus to prevent such diseases; and teachers of cooking and dietetics will emphasize the importance of vitamin foods. If McCarrison's conclusions are correct, vitamin deficiency is far-reaching in its effects and becomes a matter of more than growth, beri-beri, pellagra, rickets and scurvy, important as these are.



# NEWS OF THE FOOD TRADES

## Predicts World Coffee Shortage in 1922

### Brazilian Commercial Attache Estimates Post-war Demand at 3,000,000 Bags Greater than Supply

In an address before the convention of the National Retail Tea and Coffee Merchants' Association at Indianapolis during the week of September 12, Sebastio Sempio, Brazilian commercial attache, predicted a world shortage in the coffee supply ranging from 2,000,000 to 3,000,000 bags and stated that this is bound to be reflected in an increase in values.

Basing his estimates on the growing per capita consumption of coffee in the United States, the increased buying of French and Italian ports, as well as the enlarging market in Japan and Asia, Mr. Sempio declared that a modest estimate of the coming demand would be 19,500,000 bags to be balanced off against a total production throughout the world of only 16,000,000, this including the entire output of Brazil.

#### Coffee, a National Food

"The figures and facts covering the coffee trade in the United States for the past fiscal year and for the present calendar year," said Mr. Sempio, discussing the phenomenal increase of American coffee consumption, "show that coffee is today definitely more than ever considered your national food, not only as a necessity but as great as bread, milk, sugar and salt.

"Before the war when the American consumption of coffee was only one-half of what it is to-day, the coffee drink represented already more than 4 per cent in the alimentation for American people. To-day you are going to put this most necessary drink as around 9 or 10 per cent of your entire and ordinary daily food.

#### Per Capita Consumption Increases

"According to the figures for the calendar year, which started January, 1921, the United States Department of Commerce states that the per capita coffee consumption in the United States during the first six months of 1921 was already higher than during the corresponding period of 1920.

"You were a people with a per capita consumption in 1919 of 8.9 pounds, and in 1920 you already increased it to 12.7 pounds. As far as European figures are concerned, they amounted to 10,000,000 bags before the war, in 1913, when the United States was importing only 7,500,000. To-day its position is that of the United States in 1913, but European markets will again very soon reach the 10,000,000 bags previous war consumption.

"The world's consumption figures for the last two years are the following:

	Bags
United States .....	9,700,000
Europe .....	7,650,000
All Other Countries .....	1,150,000
	18,500,000

"In my personal opinion these figures are very much below the real world's consumption of to-day. If you divide, for instance, the 9,700,000 bags given to American consumption into pounds, you will find only 1,280,000,000 pounds. But you know that the official figures of your coffee imports

in 1919-1920 fiscal year were more than 1,414,000,000 pounds, and those of the fiscal year 1920-1921 more than 1,348,000,000 pounds. About European stocks, where Hamburg first, Havre second and Trieste third, were big markets—there are very small deposits at Havre and at Hamburg, and none at Trieste. The French and the Italian coffee official monopolies and the difficulties of Hamburg for recovering are responsible for it. And Antwerp, the new European great port, has received but negligible quantities.

"The French ports of Bordeaux, Marseille and Havre are increasing their buying very much, especially Havre, which did not receive much Brazilian coffee in 1920, and is making to-day its necessary new stock buying in Brazil. The Brazilian commercial understanding between Italy and Brazil, providing as the other one between Brazil and Belgium for the buying of Brazilian coffee, is greatly responsible for the coming recovery of the port of Trieste.

#### European and Asiatic Ports Improving

"The Italian port of Genoa is also improving, and so are many other importing European ports. Countries like Argentina and South Africa have increased consumption in big proportion. The Japanese steamship lines to Brazil are a new factor in increasing the consumption, finding new markets in Asia and enlarging the demand at American markets on the Pacific Coast.

"For all these reasons it would not be exaggerating to say that the coming world's consumption of coffee will be not of little more than 18,500,000 bags, the modest figures for the past ten years, but of 20,000,000 bags. We will figure a coming world's consumption of 19,500,000 bags. It is well known to-day that the production of Sao Paulo for the 1920-1921 actual crop will not be larger than 7,000,000 or a little more than 7,000,000 bags. The production of the other coffee producing states of Brazil do not show increase for some years, and there are not any new plantations. To figure the crops of all the other producing countries, we can estimate in the most optimistic viewpoint 5,000,000 bags. Figuring the total Brazil production, Sao Paulo and all the other states, with another exaggeration—11,000,000 bags—we will find a world's production for 1921-1922 of '16,000,000' bags for a world's consumption of '19,500,000' bags, as I demonstrated before that the natural increase will reach it, or even of 18,500,000 bags, if the consumption will stay at the past figures, against all the facts and economic laws."

The convention elected as new president of the organization Lucien King, president of the King Koffee Kompany, Indianapolis, Ind. Mr. King replaces the president of the last convention and president for the period of 1920-1, George Hellick, Easton, Pa. The city chosen for the 1922 convention is Detroit.

#### Baltic States Need Cereals

All of the Baltic Republics, in the opinion of the United States Trade Commissioner H. Lawrence Groves, of Riga, Latvia, will need to import considerable quantities of cereal foods, principally rye. Finnish requirements are estimated at about 50,000 metric tons. Goods imported into the Baltic states are coming largely from Germany and considerable American foodstuffs are being sold through German houses.

## American Rice Breaks All Records

### Exports Greater and Unusual Opportunities Are Offered Because of Potato Shortage

The outlook for American rice is a bright one. Rice exports from the United States in 1921 will be far in excess of any previous year, and as a result of the potato shortage, the millers will have the opportunity of making rice the logical substitute as a food.

The quantity of rice exported in the seven months ending with July, 1921, notes the "Trade Record" of the National City Bank of New York, has been 373,000,000 pounds against 393,000,000 in the full calendar year 1920, which broke the record in the rice exports of the United States.

Present indications are that the exports of rice in the calendar year 1921 will approximate 650,000,000 pounds against 393,000,000 in 1920, 168,000,000 in 1918, 68,000,000 in 1915, and 28,000,000 in the year immediately preceding the war, 1913. Thus, the exports in 1921 will be about 25 times as much as in the year preceding the war and approximately 50 per cent above the former high record year 1920. Even this big total for 1921 does not include the shipments to Porto Rico and Hawaii, our own islands, which will approximate 150,000,000 pounds and bring the grand total of American rice passing out of our ports in 1921 up to 800,000,000 pounds, or about 40 per cent of the crop of 1920.

The value of the 1921 shipments to foreign countries and our own islands will be about 25 million dollars, notwithstanding the fact that the export prices of rice in July, 1921, were only about 3 cents per pound against 10 cents in the same month of last year.

A recent bulletin of the Bureau of Markets and Crop Estimates of the United States Department of Agriculture, as was noted in the September issue of The American Food Journal, commented on on the prospective shortage of the potato and mentioned the possibility of an increased demand for rice as a substitute. "Printers' Ink," of New York, welcomed the suggestion, and indicated the advantages advertising this fact would bring. A recent editorial in that magazine said in part:

"Now that the Rice Millers' Association has experienced the selling power of a well-planned campaign of intensive advertising—consumption having increased threefold, according to the report of the president of the advertising organization—we should hate to see such a fine opportunity for a timely campaign slip by unnoticed. For be it understood that although those who are close to the crop realize how well rice can take the place of potatoes, it should not be taken for granted that the general public knows all about it. In fact, it is more than likely that the large mass of people will continue demanding potatoes, complaining all the while of their high price and ignorant of the possibilities of rice as an alternate.

"Furthermore, there is the opportunity, through consistent educational advertising, of taking rice out of the 'substitute' class in countless homes and giving it a permanent place on the menu.



"In other words, advertising could accomplish two tasks right now for the Rice Millers' Association which would be of lasting benefit to the individual growers. It could cash in on the temporary shortage of potatoes by presenting in attractive copy methods of preparing rice to take the place of the spud, and get a lasting hold on the new consumers through a consistent educational campaign."

## Scandinavian Market For Condensed Milk

American unsweetened condensed milk, already a favorite with the Norwegian housewife because of its digestibility and palatability, will probably be in greater demand in the Scandinavian countries in the near future, says Consul George Nicholas Ifft, of Bergen, Norway, because press reports from all sections of Norway indicate the 1921 hay crop to be far below average. Reports from Sweden, Denmark, Netherlands, and Great Britain indicate a similar condition in those countries. As a result of such shortage in fodder, the Norwegian farmer will have to slaughter some stock before winter sets in or carry them on light ration. This, for the present, would undoubtedly mean more and cheaper meat, but a consequent diminished supply of milk and butter, with a concurrent rise in price of these commodities, will result. Such a situation would undoubtedly create an increased demand for condensed milk, margarin and oils.

Reports indicate a similar condition exists as to the shortage of forage crops in all of northwestern Europe. In France there has been an unusual movement of live stock to market for the past two months. A list of the importers of condensed milk at Bergen may be obtained from the Bureau of Foreign and Domestic Commerce or its district or co-operative offices.

## Announce Change in Date of Canned Foods Week

Canned Foods Week will be held March 1-8, 1921, instead of the first week in November, as originally announced, according to a statement issued by the National Cannery Association. This decision was reached following a conference in Washington attended by H. P. Strasbaugh, of Aberdeen, Md., president of the National Cannery Association, Royal F. Clark, of Beaver Dam, Wisconsin, national chairman of the Canned Foods Week committee, and Russell B. Kingman, of Orange, N. J., member of the Canned Foods Week Committee.

### Will Keep Out Foreign Cheese

The Czechoslovak Office for Foreign Trade announces that permission to import cheese will no longer be given, the home production now being sufficient to supply domestic consumption, reports Consul C. S. Winans from Prague.

### William Melvin Dies

William Melvin, one of the best known vinegar and bottling supply brokers, died at his home on September 10. The burial was at Milford, Del., his early home.

# Philadelphia Wholesalers in Big Campaign to Stimulate Business

## Will Co-operate With 3,000 Leading Retailers in Promoting Sales Through \$50,000 Popular Contest

Under the auspices of the Wholesale Grocers' Sales Company, of Philadelphia, in co-operation with the leading wholesale grocers of that city, a comprehensive plan has been perfected and is already being put into operation for the stimulation of business among the 7,500,000 inhabitants of the states of Pennsylvania, New Jersey and Delaware.

The scheme, which is known as the "advocate sales campaign," has as its objective the sale of merchandise through the familiar channels of distribution, with the important distinction, however, that it will bring to bear the pressure of a popular contest for awards amounting in value to \$50,000. It is directed by A. B. Eads, well known in the grocery field for the past forty years, and has as its trustee Harry U. Sharp, treasurer and general manager of the Wholesale Grocers' Sales Company.

### Primarily a Sales Campaign

Primarily a sales campaign, the plan is selective of package products of the best quality, only one article in one line being admitted, although manufacturers of several allied products, if all represent the highest standard of merit in their respective fields, can make separate contracts for every specialty.

The terms of the contract with the manufacturer predicate immediate increase in sale and distribution of the product. The campaign admission charge, designed to cover all costs involved in the campaign proper, is \$5,500, of which \$500 is in cash and \$5,000 is in the merchandise, valued at the net price to jobber, to be delivered f. o. b. Philadelphia, with price protection guaranteed by the manufacturer for a period of 30 days.

The 300 salesmen of the 21 wholesale grocery houses composing the Wholesale Grocers' Sales Company of Philadelphia, immediately on receipt of the goods, sell them to the retailers and then, over a period extending to the close of the year, continue to push an intensive sales campaign on the product.

While it is anticipated that the campaign will affect the grocery trade in three states, initial efforts will be concentrated on Philadelphia and its vicinity as the main field of operations.

Philadelphia and its vicinity as the main field of operations.

### Contestants Nominated by Retailers

Over 3,000 of the leading retailers, it is estimated, will be selected to act as agents of the campaign, each of whom will be delegated with authority to nominate from 10 to 25 housewives as contestants in the \$50,000 redemption contest, although it will always be possible for a woman failing of nomination by one of the appointed retailers, to effect her own nomination and to start on even terms with regular contestants.

The arrangement provides for a minimum of 35,000 contestants, with the probable number actually engaged verging on 100,000.

The wholesale grocery firms, under whose auspices the campaign is undertaken are: Conly, Flanigen & Company, James Crawford, Frank Lee Dickinson & Company, James Gillespie & Son, Jonathan Graham & Son Company, William J. Graham & Company, Halpen, Green & Company, H. Kellogg & Sons, H. K. Kindig & Company, William King & Company, Kirk, Foster & Company, Lippincott & Company, Alfred Lowry & Brother, William Montgomery & Company, John Price & Company, Reeves, Parvin & Company, Schwenk & Caldwell, John Scott & Company, Inc., Samuel R. Sharp Company, Inc., Charles Shaw & Son and J. Frank Shull Company.

### Executive Committee

The campaign is under the general supervision and has the active co-operation of an executive committee appointed by the Wholesale Grocers' Sales Company, composed of Robert L. Montgomery, of William Montgomery & Company, chairman; William C. Halpen, of Halpen, Green & Company; Joseph B. Alexander, of Alfred Lowry & Brother; Francis B. Reeves, Jr., of Reeves, Parvin & Company; W. Harold Forster, of Kirk, Forster & Company, and James Crawford. Mr. Montgomery, the chairman, is president of the Wholesale Grocers' Sales Company, of Philadelphia, and president also of the Pennsylvania, New Jersey and Delaware Wholesale Grocers' Association.

## New Process for Treating Figs

A new process of treating figs has been discovered by J. C. Forkner, of Fresno, Cal., and perfected in the laboratory of the Forkner Fig Gardens. The process, according to the Fig Growers' Research Bureau, makes possible the blending of fresh and dried figs in a product that resembles so closely the choice pulled figs that merchants who have handled the latter commodity are unable to detect a marked difference in appearance. In flavor it is said to surpass the ordinary dried fig.

The announcement was not made public until samples had been sent all over the country and returns from dealers received. In almost every case the verdict on the new product was that it was a peeled fig. Fig packers in Fresno who have sampled the product have expressed confidence in the future of this process.

Exhaustive tests indicate that the new product has keeping qualities that are lacking in ordinary figs and have been a source of loss to dealers.

## Thomas E. Lannen Dead

Thomas E. Lannen, attorney and secretary of the National Manufacturers of Soda Water Flavors and counsel for the Flavoring Extract Manufacturers' Association, died at his home in Chicago on September 16. A delegation of members of the two associations paid a testimonial to the deceased at his boyhood home in Amboy, Ill. The firm of Lannen & Hickey, with which he had been associated as senior partner, will continue business under the same name at their present offices, 1236-38 First National Bank Building, Chicago. As in the past, special attention will be given to food and drug laws and trade association matters.

### Convention of Soda Water Manufacturers

The National Manufacturers of Soda Water Flavors will hold its annual convention in St. Louis October 24 and 25. The hotel in which the convention will be held has not yet been selected.



## Food Trade With Brazil Hit Hard by High Tariff and Other Local Conditions

### American Food Manufacturers Find New Ways to Overcome Barriers— Many Canning Plants Established There

Trade in foods with Brazil has undergone a setback recently as a result of the high tariff barriers erected by that country against canned goods and preserves, the determination of Brazilian merchants to profiteer as much as possible on food products, the growth of tropical and subtropical fruit production, and the recent establishment in that country of canning factories comparable in every respect with those found in other countries, advised Bernard H. Noll, Assistant Trade Commissioner at Rio Janiero.

American and British manufacturers, however, are handling the situation in a variety of ways. One important American company selling California fruits, preserves, canned goods, etc., has its own branch there. Another company sold its goods through an American manufacturer's representative, but has discontinued importations because of the difficulty in handling, the loss in the customhouse and breakage, high duties, and the unfavorable exchange rate. The larger British manufacturers sell through their traveling salesmen, sent out from England to cover all or parts of South America. Most of the larger grocery stores carry a certain amount of imported food preparations in stock.

#### Dwindling Demand in All Lines

The dwindling demand for food products has made itself felt in all lines, although the United States is not the chief sufferer and indeed in some cases is head and shoulders above its competitors. Breakfast food imports and typical American products, such as catsup, are negligible owing to the familiarity of the Latin races with them. Imports of preserves and extracts into Brazil, including olives, codfish, lard, preserved meat and extracts, preserved fruit, vegetables, fish and unenumerated extracts, hams, bacons, and jerked beef, have been reduced to almost one-third of the amount received in 1913. Lard and preserved meat

imports have become comparatively unimportant since the meat-packing industry has been established in Brazil.

On the other side of the slate, however, the United States leads in preserved fruits and its extracts, shipping 89,325 kilos out of a total of 96,562 kilos imported in 1918 [kilo equal to 2.204 pounds], but in preserved vegetables Holland leads, with Portugal a close second. The United States is second largest shipper of preserved fish, Portugal leading.

In the importation of preserved fruits, the United States is in the lead, supplying five-sixths of the apples, two-thirds of the pears, and promising the lead very soon in the shipping of grapes. The United States has supplanted France as the third largest exporter to Brazil of dried fruits, stands second in the shipment of fresh fruits, and sends 98 per cent of all the condensed milk used in Brazil.

#### Imports of Cheese and Sugar

There has been a large decrease since pre-war years in the imports of cheese, due partly to increased native production. In 1913 Italy exported to Brazil over 54 per cent of all cheese imported and Holland 38 per cent, with Switzerland standing next. In 1918 Holland and Switzerland shipped no cheese, but Argentina shipped 61,604 kilos and the United States 3,141 kilos out of a total of 72,082 imported.

Out of a total of 33,497 kilos of sugar imported in 1918 the United States shipped 31,765 kilos. This unquestionably was cube or domino sugar, since Brazil produces enough sugar for home consumption. In 1913 most of the potatoes came from France, Portugal, Argentina and Germany; but while imports decreased in 1918 to about one-seventh of former years the United States shipped 98 per cent of the total brought in. At present Brazil produces nearly enough for local requirements.

### San Antonio Pecan Shelling Company

The San Antonio Pecan Shelling Company, San Antonio, Texas, capitalized at \$300,000, was recently organized with the following officers: V. R. Hood, president; M. H. Clark, vice-president; and C. F. Hutches, manager. All are prominent business men of San Antonio, having been engaged in similar lines for some years. Plans of the new company contemplating engaging in the pecan business on a large scale and look forward to a shipment of pecans all over the United States and some points in Canada. Mr. Hutches, who together with Mr. Clark, will be active in managing the affairs of the new business, was formerly with the Duerler Company.

#### Helvetia Company Moves

General offices of the Helvetia Company, manufacturers of sterilized, unsweetened, evaporated milk, have been removed to St. Louis. Pet milk, which the company has been manufacturing for many years, is still appearing in the old Pet milk label with the addition of the words: "Milk at Its Best."

### National British Food Exhibition for 1922

A national British food exhibition of the foodstuff manufactures of the United Kingdom and overseas dominions has been planned for September, 1922, by the International Trade Exhibitions, Ltd., and Trades' Markets and Exhibitions, Ltd. The American Chamber of Commerce at London is keenly interested in the project and in calling it to the attention of manufacturers in the United States, recommends the project as an exceptional opportunity for them to acquaint the empire with their products.

The exposition, it is contemplated, will be devoted to exhibits of foodstuffs and their preparation, accessories connected with their manufacture and distribution, raw stuffs and cereals, dairy products, every description of beverage, foodstuff machinery, refrigerating apparatus, cooking utensils, etc.

The exhibition will not be confined to the display of food products and machinery, but it is planned to inaugurate demonstrations of cookery as well as other items of public interest. Manufacturers will be permitted to install working exhibitions of

model factories and to give away or sell samples of their products.

A novel feature of the exposition will be the apportionment to advertising and publicity of not less than 25 per cent of the rentals from space letting.

The organizers of the exhibition are firms of old standing and may be reached at Broad Street House, New Broad Street, London.

### Vigilance Committee for Prohibition Law Enforcement

A vigilance committee was appointed by the Flavoring Extract Manufacturers' Association at a special meeting of the executive committee, September 16 and 17, for the purpose of discovering all violations of the prohibition law that come to the attention of members of the association.

"It takes only one or two violators of the prohibition law," says an official announcement of the association, "to give a black eye to the whole industry, and we are resolved to do all in our power to eliminate all questionable or unlawful practices on the part of our members and on the part of non-members as well."

Members of the association who have sufficient cause to believe that any flavoring extract manufacturer is operating in violation of this law are requested to report the matter to the member of the vigilance committee who is located nearest to the alleged offender. All complaints must be carefully substantiated with evidence.

These will be carefully investigated by the member of the vigilance committee whose attention is called to the suspected violation, and if charges are well founded, they are to be forwarded together with the evidence to the chairman of the committee, who has the power to bring all such matters to the attention of the attorneys of the association for final action.

The vigilance committee consists of Frank Beggs, Newark, Ohio, as chairman, together with the officers of the association and additional members of the executive committee, including Robert E. Heekin, Cincinnati, Ohio; L. B. Parsons, New York; Gordon M. Day, Milwaukee, Wis.; R. H. Bond, Baltimore, Md.; G. C. Davis, Knoxville, Tenn.; Fred S. Rogers, Middletown, N. Y.; E. P. Price, Chicago, Ill.; John T. Stutz, St. Louis, Mo.; and the firm of Lannen & Hickey, attorneys, Chicago, Ill.

#### American Rice for Syria

A recent report from Consul Paul Knabenshue, at Beirut, Syria, states that rice is imported from India, China, and Japan, but the best grade is imported from Egypt. Trial shipments of rice were also imported from the United States and the quality proved satisfactory. In case the American rice can be offered at competitive prices, there will be a good market for it. According to available statistics, 8,377,590 pounds of rice were imported into Syria through the port of Beirut in the year 1920.

#### New Indianapolis Food Products Company

The Snyder Community Kitchen Company has been established at Indianapolis at a capitalization of \$10,000. The firm will manufacture food products. Its directors are S. P. Snyder, L. I. Allen, C. R. Snyder.

The Lakeside Canning and Pickling Company was recently organized at Manitowoc, Wis., with a capitalization of \$100,000. L. E. Wederts, H. L. Wederts and S. K. Ferguson are the incorporators.



## European Demand for Our Food Products

### Heavy Increase in Exports During Last Three Months Shown by Government Reports

Exports of American products to Europe are probably the most definite indication of European needs, according to a report prepared by the Foodstuffs Division, Bureau of Foreign and Domestic Commerce. The heavy and increasing exports of foodstuffs and cotton during the last three months, a period of the year when exports to Europe are usually at the minimum, is worthy of careful consideration. With European countries slowly recovering in industrial activities it is to be expected that their most pressing needs would be food products and raw materials.

There is no exact method for determining the "normal" exports for a particular month, but in order to have some standard of comparison, the average exports for each month for a five-year pre-war period 1910-1914 have been calculated and are frequently referred to.

Meat products, after a period of declining exports from January to May, took a sharp turn in June which continued for July. The exports for July were twice the normal pre-war exports for that month. Lard and cured pork products constitute about four-fifths of the total. Lard, which declined from February to May, took a sharp upturn in June which was continued in July, the exports for the three months being 51, 69, and 84 million pounds, respectively. Cured pork, which remained at about 60 million pounds per month from February to June, rose to 86 million pounds in July.

#### Large July Wheat Exports

Wheat (and wheat products calculated as wheat) exports continued in large volume for the month of July, amounting to a total of 30 million bushels, or about four and a half times the pre-war average exports for July. Ordinarily the movement of United States wheat drops to about minimum in February and remains at a low level through July, taking a sharp upturn in August, reaching maximum in October and gradually declining again to February. For the season beginning July, 1920, the upward trend to October and downward trend to May was about normal, but a large increase in exports began in April, four months earlier than usual, and reached a very high level in June, when 32 million bushels were exported, almost five times pre-war exports for this month. The high exports have continued through July.

Before the war Russia furnished nearly one-half the wheat imports of western Europe. The great loss of wheat from this source has been largely made up by increased production in the Western Hemisphere and Australia. The unprecedented takings of wheat during the past three months indicates that Europe is purchasing its supply earlier than usual. Wheat is in a very strong statistical position. The European takings of other grains, principally corn, has been unusually large since last Novem-

### The Passing of the Horse

In the course of a study recently made on the progress of motor truck transportation in the wholesale grocery business in Chicago, F. L. Edman, of the Transport Truck Company, found that our erstwhile beast of burden, the horse, is fast becoming obsolete for this kind of work.

"We made the change from horses to trucks twelve years ago," he quotes the transportation manager of one of Chicago's largest wholesale grocery businesses as saying, "and we now have twelve trucks in operation of one to five tons load capacity." Another big Chicago grocery house that Mr. Edman visited uses seventeen trucks of three-ton capacity. This house asserts that one truck replaces four horses. Both of these houses, according to Mr. Edman, affirm that the truck has increased the trade radius to an extent not possible with horses.

An example of how trucks have come into use in the provision business was instanced by Mr. Edman in the case of D. F. Peyser & Son, transport distributors from Hung Wo Produce Company, Los Angeles, Cal. This Chinese firm has two trucks in use, one for 2,000- and another for 3,000-pound service.

ber and for the past two months has been about nine times the takings for the same months in pre-war years. It may also be of interest to note that shipments of cotton, after being below normal for from last August to April, have been considerably above normal for the past three months.

The export value of agricultural products has shown an unusual upturn since May. Normally agricultural exports decline in value from January to July and increase rapidly from August to December, when both the wheat and cotton crops are moving. The upturn in value, however, began last May, four months earlier than usual.

This recent unusual demand by Europe for food products and cotton may be taken as a probable indication of export demands for the near future. Europe must buy carefully, but food and raw materials are pressing necessities in industrial recovery. There will probably be continued demand for these products in the coming months.

## Raisin Crop Takes Unusual Slump

### But United States Still Produces More than Half of World Output

Announcement of the unusual shortage of the raisin crop of the United States in the current crop year calls attention to the great growth of our raisin industry in recent years. Figures collated recently by the "Trade Record" of the National City Bank of New York indicate that the record-breaking crop of 380,000,000 pounds produced in 1920 has slumped in the current crop year of 1921 to only 220,000,000. Nevertheless, the United States is still in the lead among the raisin-producing countries, raising by itself approximately 60 per cent of the world crop.

California, adds the bank's statement, is our chief raisin producer, practically all our enormous production originating in that state. The total raisin production of the country amounted to but 180,000 pounds in 1874, 103,000,000 in 1894, 190,000,000 in 1912, 264,000,000 in 1916, 300,000,000 in 1918, 340,000,000 in 1919, and reached its apex of 380,000,000 in 1920, but dropping in the short crop year 1921 to 220,000,000 pounds. The processes of turning the grape into the raisin have been greatly improved in recent years by the use of machinery for curing, seeding, packing and distributing the enormous crop in which we normally lead the world. Our chief rivals in the world's raisin industry are the Mediterranean countries, Chile, and southern Australia, which has recently come into the field as a raisin producer. The United States produces in normal years 60 per cent of the raisin crop of the world.

Our chief customers for the raisins exported, which made their "high" record of 110,000,000 pounds with a value of over \$13,000,000 in the calendar year 1913, are Canada, Great Britain, the Scandinavian countries, Mexico, New Zealand, Japan, and smaller quantities to the South American countries, Africa, Asia and Oceania. To Canada alone we sent 32,000,000 pounds in 1920, Great Britain 14,000,000, and New Zealand and Japan about 1,500,000 pounds each. Of the 46,000,000 pounds of raisins imported in 1920, 25,000,000 pounds came from Spain, 5,500,000 from Asiatic Turkey, and 2,500,000 from Australia.

### Recent Patents

The following patents of interest to readers of The American Food Journal recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burnham, patent and trade-mark attorney, Continental Trust Building, Washington, D. C., at the rate of 20 cents each. State number of patent and name of inventor when ordering.

1,386,627. Confection for use as a chewing-gum. Frank Y. Keator, Auburn, Ill.

1,387,019. Candy-making. Joel Starrels, Niagara Falls, N. Y.

1,387,377. Manufacture of high-class "fondant" chocolate and similar chocolates. Frederick G. Fryer and Basil G. McLellan, York, England.

1,387,378. Manufacture of high-class "fondant" chocolate and similar chocolates. Frederick G. Fryer and Basil G. McLellan, York, England.

1,387,379. Manufacture of high-class "fondant" chocolate and similar chocolates.

Frederick G. Fryer and Basil G. McLellan, York, England.

1,387,387. Process of producing bread and other like foodstuffs. Robert Graham, Cupar, Scotland.

1,387,560. Process of preparing whole rice. Aimee M. Saint, Kaplan, La.

1,387,562. Nut-blanching machine. Harry E. Spiker, Chicago.

1,387,574. Candy-mold. Peter Witty, Evanston, Ill.

1,387,693. Process of forming bakers' mix. Frank A. Doyle, West Chester, Pa., assignor to Sharples Separator Company, same place.

1,387,710. Method of drying vegetables and fruits. Burt S. Harrison, Brooklyn, N. Y., assignor to Carrier Engineering Corporation, New York.

1,388,024. Egg-preserved. Victor Clairemont and Christian T. Lehmann, San Francisco.



### Enter the Prune in Five-Cent Garb

The prune will follow the raisin's example. It, too, is to be sold by candy stores, cigar stores and newsstands in cheap, handy packages, according to plans just announced by the California Prune and Apricot Association.

With the successful example before them of the raisin growers in making their product popular through the medium of nationwide five-cent sales, the association believes there will be a big demand for the five-cent carton of prunes.

The five-pound carton it has hitherto been putting up has been found not especially adapted for sale in large cities, although it has proved a marked success in the Middle West and smaller cities of the country. Although full details have not been announced yet, the association is also planning a two-pound carton especially for sale in the large cities, where the average consumer has very small storage space. These two-pound cartons will be offered for sale shortly and will contain 50-69 size selected prunes.

1,388,394. Peanut-blanching machine. Roscoe P. Witt, Kansas City, Kan., assignor to Ridenour-Baker Grocery Company, Kansas City, Mo.

1,388,395. Method of blanching peanuts. Roscoe P. Witt, Kansas City, Kan., assignor to Ridenour-Baker Grocery Company, Kansas City, Mo.

1,388,574. Peanut-blancher. Gustave C. Kelling, Chicago.

1,388,639. Butter-making machine. Charles H. Halt, New Haven, Ind., assignor to Non-Explosive Appliance Company, Fort Wayne, Ind.

1,388,699. Food product and process of preparing same. Ralph W. Crocker, Chicago.

1,388,702. Method of and apparatus for drying macaroni and the like. Alexander Gallerani, Pittsburgh, assignor to H. J. Heinz Company, same place.

1,388,873. Manufacture of cereal food. Eugene H. McKay, Battle Creek, Mich., assignor to Kellogg Toasted Corn Flake Company, same place.

1,388,982. Red caviar and the method of making and preserving the same. Michel P. Vucassovich, Wellesley, Mass.

1,389,389. Food product and process of making same. Clarence H. Simpson, Front Royal, Va.

1,389,577. Cheese and process for sterilizing the same. Linn E. Carpenter, East Orange, N. J., and Elmer E. Eldredge, New Berlin, N. Y., assignors to Phenix Cheese Company, New York.

1,389,795. Peach-pitter. Albert R. Thompson, San Jose, Cal., assignor to Anderson-Barngrover Mfg. Company, same place.

1,389,796. Method of peeling fruit. Albert R. Thompson, San Jose, Cal., assignor to Anderson-Barngrover Mfg. Company, same place.

1,389,887. Machine for cooling chocolates and the like. Frederick W. Leyland, Cambridge, and Edward P. Brock, Boston.

1,389,947. Art of compounding fats and oils. Valentine Hechler, Chicago, assignor to Wilson & Company, same place.

1,389,251. Cooling receiver for coffee roasters. Henry H. Moenkhaus, Evansville, Ind.

1,390,251. Process and apparatus for refining chocolate and the like. William C. Schoppner, Astoria, N. Y.

## Dutch Demand For Oils on Up-Grade

### But Imports of Oleo in Netherlands Decrease as Result of High Prices

A marked increase in the demand for vegetable oils in the Netherlands is one of the most conspicuous developments of the Dutch trade during the past six months, according to advices of Consul General George E. Anderson, of Rotterdam. Accompanying this, however, imports of neutral lard and oleo for the oleomargin industry have fallen off considerably, as a result of the high prices for the animal fats as compared with other raw materials.

There has been a distinct improvement, according to Dutch manufacturers, in the quantity of such goods received from the United States in the past few months. The largest manufacturer in the Netherlands reports that the quality of butter oil (refined cottonseed oil) is now satisfactory, having improved materially since importations at the beginning of the year. Importers also report that the quality of American beef premier jus, which is produced chiefly in Argentina in factories largely owned or controlled by American firms, has changed for the better, although the shipments still lack that even quality of pre-war days.

Import statistics of these various products during the first six months of the current year show that the United States is far ahead of all competitors in the Dutch

food trade. Of 1,612 metric tons of neutral lard, 1,580 came from the United States, while 2,592 of 2,725 metric tons of pure lard was of United States origin. Competition in compound lard has appeared in Norway, which with Belgium divided about one-third of the trade, while the United States has the remainder. The United States controls about 80 per cent of the trade in tallow and grease and Great Britain and Australia furnish most of the remainder. The United States is credited with something more than half of the premier jus, while the rest comes chiefly from Argentina. Brazil, which had a part in the trade last year, dropped out during the current season. Practically all of the margarin has come from the United States, and the same may be said of cottonseed oil. France has again commenced to crush peanuts and furnish 2,493 metric tons of peanut oil out of 3,904 imported last year, with China as the chief other source. Great Britain supplied most of the palm oil and palm-kernel oil. Of 22,002 tons of coconut oil, the Dutch East Indies furnished 14,397 metric tons; Ceylon, 3,528 metric tons; the Philippines, 1,424 metric tons; and other East Indian islands about 1,000 tons. Japan was the source of between 85 and 90 per cent of the total imports of soya-bean oil.

## Increase in National Tomato Consumption

### New Jersey Agricultural Station Shows Yearly Ration is Over Three Cans Per Capita

Although Maryland had the largest tomato acreage of any state in the Union during the period from 1917 to 1920, it was first in production only in 1917 and 1918, sixth in 1919, and second in 1920, according to figures now made available by the New Jersey Agricultural Experiment Station in its latest bulletin, "Costs, Profits and Practices of the Can-house Tomato Industry in New Jersey," by Frank App and Allen G. Waller. Indiana was fourth in production in 1917, third in 1918, second in 1919, and third in 1920; whereas New Jersey was third in 1917, fourth in 1918, third in 1919, and fourth in 1920.

A steady increase in the consumption of tomatoes since 1891 indicates that there is an opportunity to educate the public to the value of tomatoes as a food. During the 10-year period, 1911-1920, there was a consumption of 3.08 cans per person, or an increase over the previous ten-year period of not quite half a can. From these figures it is shown that, as a result of population density and absence of production in the New England section, New York produces less than half of its own needs, Pennsylvania even less, whereas New Jersey produces a surplus, having a production of 8.9 cans per individual.

The East North Central section produces only 1 3-4 cans per person, or less than the normal requirement for its own inhabitants, so that it appears that they are not competing with outside markets. The same is true of the East South Central section, which produces a little over one-third of a can per person, whereas the West South Central area produces none. The South Atlantic section is the one which produces the tomatoes for a large proportion of the non-producing areas. Of this section itself, the larger producers are Maryland, Delaware, Virginia, South Carolina, Georgia and West Virginia. The average production of this section per person was 13.2 cans. Consequently, they are surplus producing states. It appears that these states would be the ones which set the price for the country, as the cost at which they are raised, plus the cost for which they are canned, will influence the amount that is produced for shipping into other regions.

### Pfaff-Peck-McCall

The Pfaff-Peck-McCall Company, Inc., of Minneapolis, Minn., recently filed articles of incorporation. It will sell teas and coffees, spices, canned goods. Martin L. Pfaff, G. Floyd Pfaff, A. R. McCall, and Henry E. Grabow, of Minneapolis, are the incorporators. The capitalization is for \$100,000.

### Italian Postal Administration Prohibits Coffee Imports

The United States Post Office has recently been advised by the Postal Administration of Italy that coffee, except samples addressed to commercial houses, is prohibited importation into Italy through the parcel post.



## Slackening in Meat Exports During September

### This, With Disinclination of Consumers to Buy More Expensive Meats, Principal Recent Developments

There were two distinct features of the meat trade during September. One was the slackening of the export demand. The other was the persistent disinclination of the consuming public to forego its wartime preference for the most costly kinds of meats, says the Institute of American Meat Packers.

With nearly 4,000,000 industrial workers reported idle by the President's Sub-Committee on Unemployment Statistics, it naturally would be expected that the so-called choice meats would be in less demand and that a considerable share of the consuming public would turn to those cuts which, although they require more time for cooking, are highly palatable and nutritious and are available at very much lower prices.

But, with a single exception, there has been no change in consumers' buying preferences. Throughout the month of September the beef from more costly cattle was in better demand than the less expensive grades; and the relatively higher priced pork cuts were more eagerly sought than those selling at lower figures.

The single exception to be noted has to do with the forequarter cuts of beef. Beef experts say that, partly on account of the season and partly on account of educational efforts conducted by packers, household editors, agricultural colleges and various other agencies, the public is now evincing greater interest in and a relatively increased demand for forequarter beef cuts.

From the standpoint of the individual consumer, and particularly the consumer who on occasion is partial to delicatessen foods, a little feature worth remarking is the decline in boiled hams during the month. The wholesale reduction on these hams ranged from five to ten cents a pound.

#### Export Trade

Shortly after the first week of September, the foreign demand slackened. The trade with England was dull, which was not surprising in view of the somewhat unsettled conditions in the United Kingdom and in view of the fact that the British usually are slow buyers on a declining market.

On the continent, too, demand decreased and was confined to spot stocks. Some packers reported satisfactory sales from stocks already abroad, other packers reported a small volume even on spot sales.

It is said that stocks in the United Kingdom are not heavy and that on the Continent, notwithstanding the goodly supply of lard there, the stocks are not burdensome. It is pointed out that this is the normal season for a good demand for lard from Continental Europe.

#### Strengthened Demand for Fats

In connection with the large requirements of Central Europe, it is worth noting that a drouth in Continental Europe has reduced the fat on meat animals and thus strengthened the demand for imported fats. To this circumstance, one packing company attributed the fact that it sold large quantities of oleo oils to European buyers during September. For the same reason, it is said, tallow has been in good demand. The decrease in domestic lard stocks is a factor that should be considered in relation to prospective exports of lard.

#### Domestic Trade

The packing industry, with values fully liquidated month by month ever since the

readjustment period began, is finding a fairly good demand for its pork products (as well as beef products) at the levels now prevailing. In fact the price of meat, which is a perishable commodity, has proved itself not only responsive but sensitive to conditions of supply and demand, and values, throughout the whole transitional period, have been readjusted to levels at which the products moved. Meanwhile the receipts of live stock have been absorbed promptly, and production has been carried on at a volume fully equal to that of normal years.

From the beginning to the end of September, hams declined at wholesale four or five cents a pound. Standard bacon declined a cent or two, and fancy bacon somewhat more, but the demand for smoked meats strengthened toward the end of the month. Boiled hams, as previously noted, showed declines ranging from five to ten cents a pound.

#### Whetted Appetite for Fresh Pork

Cooler weather seemed to whet the consumers' appetite for fresh pork. There was a good demand from dealers for it, and, in Eastern markets, the demand was very strong in proportion to the supply.

Standard bacon (bacon of medium grade) is still selling at wholesale under the price of standard ham, which is a reversion of the normal price relationship between these two cuts. Lard declined during the month.

At present levels, there is a satisfactory trade. Business on many items improved during the last few days of the month.

### British Margarin Industry Triples Pre-War Production

Unlike the margarin industry of the neutral Scandinavian countries, which suffered a set-back because of insufficient raw materials during the war period, the margarin industry of Great Britain, owing to increased demand and its ability to secure raw materials sufficient to cope with the enlarged trade, more than tripled its greatest pre-war average production.

Previous to the impetus received during the war years the output of margarin in the United Kingdom was not sufficiently large to supply the national demand, and imports were therefore necessary. From 1911 until 1916, notwithstanding the stimulated domestic production of margarin, imports gradually increased. In 1911 the imports were 944,405 hundredweight (hundredweight equals 112 pounds). The imports rose in 1912 to 1,352,427 hundredweight, an increase over 1911 of 43.20 per cent, and in 1913 to 1,518,297—60.77 per cent more than in 1911. In 1915 the imports were 2,024,469 hundredweight, and in 1916 the peak was reached with 2,738,343 hundredweight, an increase of 189.95 per cent over 1911. With 1917 a decline began, imports for the twelvemonth amounting to 1,801,928 hundredweight; in 1918 the imports were the smallest in years—301,650 hundredweight, a decrease from the 1913 figure of 80.13 per cent. They rose in 1919 to 459,369 hundredweight and in 1920 amounted to 897,972 hundredweight, but this latter figure was still 4.92 per cent under the 1911 total.

### NOW IS THE TIME FOR WAR ON RATS

Waste in food products, destruction of property and the danger of disease laid to the ravages of the rat has been estimated recently by Dr. Victor G. Heisler as costing the United States \$250,000,000. Buildings storing foods and food products are still the happy hunting grounds of these pests, and manufacturers and storers will do wisely in furthering their extermination by every possible means at their command.

Suggestions as to how this may be done are contained in a recent bulletin of the Industrial Research Laboratories and the publication, "How to Destroy Rats," by David E. Latz.

Food buildings may be made proof against rats by using concrete as bases and in the case of granaries by using concrete for pillars. If a concrete floor is used it can be built on the ground, otherwise the floor should be built high enough from the ground to permit light to reach the open space under the granary proper.

Some of the expedients used by rat-ridding concerns include gas methods, poisons, and traps. Gas is probably the most unsatisfactory, since it only drives the rats from place to place and kills only those who cannot get out into the open, leaving many to die between the walls of a building.

The most successful method used today is a poison paste that kills and embalms the rat. The rat will always die in the open air as he desires air immediately after eating the poison. This method causes the rat to dry up without any odor and all that remains in the end is a dried skin.

One of the methods for which much has been claimed is the endless chain method of destroying rats, whereby one rat is inoculated with virus and allowed to infect the others. Rats being carnivorous, eat their dead. This serves to act as an endless chain and soon makes the rat extinct. The method has had very little popularity so far.

The British Census of Manufactures for 1907 shows a production for that year of 881,000 hundredweight, or 98,672,000 pounds of margarin. While there are no recent official British statistics of production available, unofficial reports give the output in the years 1913-1919 as:

Years	Wkly aver. Pounds.	Total for yr. Pounds.
1913	3,600,000	174,720,000
1914	3,600,000	174,720,000
1915	4,970,560	258,469,120
1916	5,552,960	288,753,920
1917	7,784,000	404,768,000
1918	10,205,440	530,682,880
1919	14,011,200	728,582,400

On the basis of the above reported production, the industry in 1913 had increased its output over that of 1907 by 77.07 per cent, in 1915 over 1913 by 47.93 per cent, in 1917 over 1913 by 131.67 per cent. In the 12 years from 1907 to 1919 the industry expanded over six times, production being larger by 638.39 per cent. Comparison of the first post-war year with the last pre-war year discloses a threefold expansion during the war period, there being an increase of 317 per cent. No figures for 1920 are available.



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**Q**UITE recently a hearing on the labeling of vinegar was held before the Secretary of Agriculture in Washington. As a result of that hearing, the right of legitimate manufacturers who make their vinegar from the expressed juice of fresh apples to the names "Cider Vinegar" and "Apple Cider Vinegar" was sustained.

**T**HE American Cider & Vinegar Manufacturers Association was represented at the hearing by its Counsel, Senator W. W. Armstrong, and prominent members of the organization. In his argument Senator Armstrong called attention to the Regulation of the Federal Government, F. I. D. 140, which defines the product known as waste vinegar as follows:

*The product made from dried apple skins, cores and chops by the process of soaking and subsequent alcoholic and acetous fermentations of the solution thus obtained is not entitled to be called vinegar without further designation, but must be plainly marked to show the material from which it is produced.*

**I**N the notice sent out by Federal Secretary of Agriculture calling the hearing, he announced that Government chemists had found barium compounds in the waste vinegar upon the market and that barium was a poison. The fact is that barium carbonate is employed by waste vinegar manufacturers to make their product more nearly resemble cider vinegar and apple cider vinegar in appearance.

**S**INCE this hearing at Washington and the decision of the Secretary of Agriculture, manufacturers of waste vinegar have continued to ship their product into Interstate Commerce branded as "Cider Vinegar" or "Apple Cider Vinegar," and the Department of Agriculture, determined to preserve the integrity of "Cider Vinegar" and "Apple Cider Vinegar," has made multiple seizures of the same. And so it is well for you to go cautiously when you are buying or contracting for cider vinegar. Think of your reputation; your standing; the idea of your selling something for what it is not,—prosecution and the attendant publicity—it is impossible. Cider vinegar and Apple cider vinegar (the names are synonymous) is the national vinegar; the vinegar the housewife expects to get when she asks for vinegar. Therefore, handle only the real article that is guaranteed.



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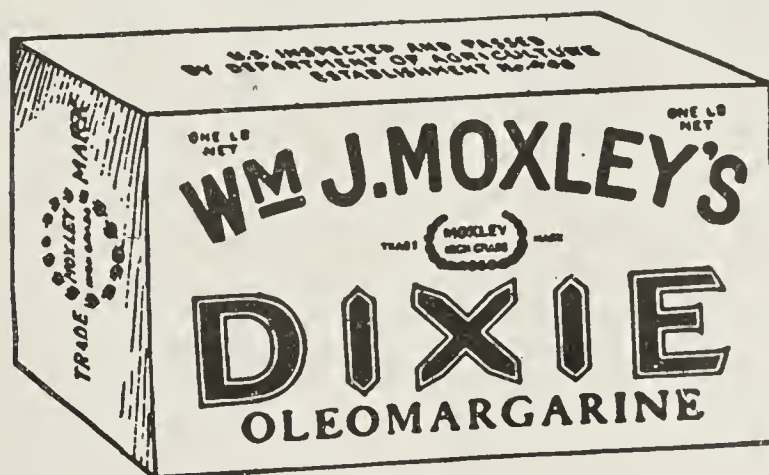
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### Possibilities in Dehydrated Bananas

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### Freedom of Competition Through Restraint

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**T**HE cartons are first wrapped in wax paper and then hermetically sealed by passing under a hot plate. This plate is shown in the illustration in the middle of three plates which are lifted off to show the operation of the machine. The first plate is merely a tension plate which holds the paper in place after it has been folded. The second plate, which in the cut contains a package, is the heater, showing how the heat is applied to both the top and the ends. The third plate is a brush which smooths out any irregularities, insuring a perfect fold and seal.

**Y**OU will notice that the machine is very accessible and that these top plates are very easily removed. You will also notice that there is but one working part above

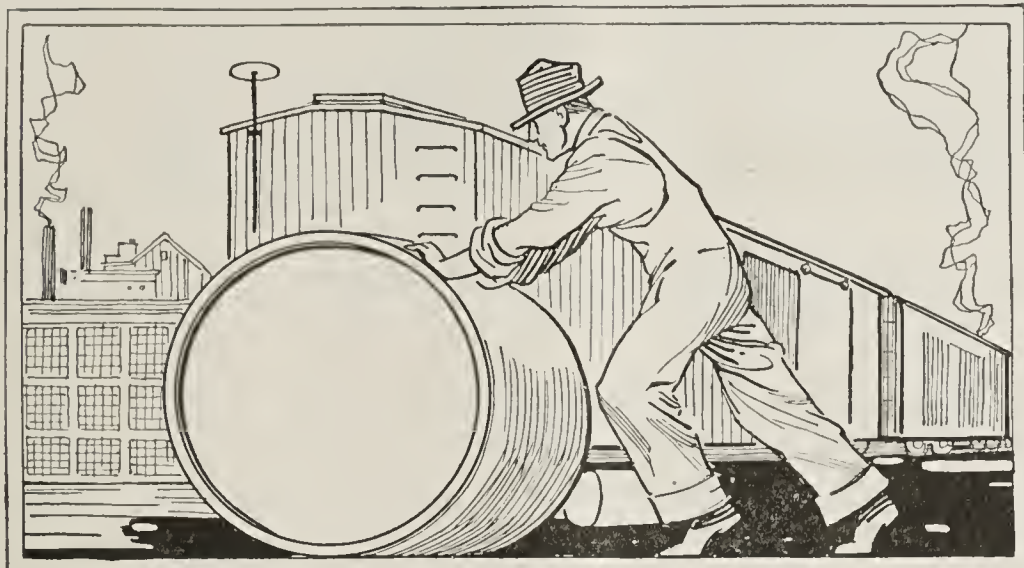
the table, this being the tucker, which is shown just in the act of descending to fold the paper around the carton just leaving the roll.

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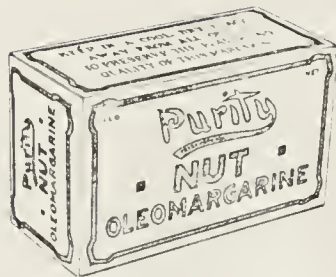
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# The American Food Journal

The National Magazine of the Food Trades

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## The Editor's Column

### FROM NEAR AND FAR

Nothing could be more conclusive as an example of the high esteem in which The American Food Journal is held in the scientific world than the recent comments of leaders among dietitians and food control officials—two groups, whose power of recommendation is invaluable to the manufacturer.

At the recent fourth annual convention of dietitians at Chicago, we were told that The American Food Journal was more valuable than ever before from the special standpoint of the dietitian and home economics instructor. At the convention of food control officials held this month at Miami, Fla., similar favorable opinions prevailed. Leaders of this organization found **gratification in the close co-operation given them and expressed confidence** that the future held much in store for a publication of our scope.

The month's mail, too, brought many good letters from these same groups. From the state of Montana, H. M. Shea, director of the Division of Foods and Drugs, thought it worth while to write and tell us just what he thought of our work:

"I consider The American Food Journal an excellent publication," he said. "Late issues have been of such a high order that you will have to 'keep on your toes' to live up to the reputation you have established. If you are overlooking anything of particular interest relating to foodstuffs I have been unable to discover it."

John W. Harrington, technical manager of the American Chemical Society's News Service, writes: "It is a great pleasure to see the skilful use you have made of scientific facts. Such co-operation with organizations such as our own is highly desirable as a means of impressing upon the American people the relation of chemistry to every-day life."

E. H. S. Bailey, professor of chemistry, University of Kansas, says: "I can most heartily commend the Journal in its new departure. The food chemists will depend upon it to furnish the latest and most reliable matter in regard to food products."

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# The American Food Journal

The National Magazine of the Food Trades

Vol. XVI

NOVEMBER, 1921

No. 11

## Food Control Officials Consider Pending National and State Measures

UNIVERSITY OF ILLINOIS  
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### Silver Anniversary of Founding of National Association Finds it More Active Than Ever—Miami Convention Brings Representatives from Government and Many States Together

WITH delegates present from many states in the Union and a number representing the United States Government, the American Dairy, Food and Drug Officials gathered for their twenty-fifth annual convention in the city of Miami, Fla., November 8-11.

Included among those who had made the journey to the "magic city of the South" for what officials of the organization called one of the most successful conventions ever held were many of the most prominent food control officials of the country. In addition to the officials representing the states and the Government, there were present during the sessions several representatives of the packers and large food manufacturing concerns.

The scope of the discussions covered all phases of food law interpretation and enforcement. Considerable attention was devoted to national food control measures, and the particular legislative problems of the states received their meed of attention also. Some of the most interesting discussions centered in qualifications, duties and essentials of good food inspectorship. Notable among the high spots of the convention were resolutions in which the organization put itself on record endorsing the Haugen bill in the form in which it has already passed the House of Representatives and urging the executive committee to prepare plans for bringing about greater uniformity in state food laws. In strong terms the convention disapproved the Calder bill now pending in the Senate.

#### President Rose Opens Convention

The convention was called to order November 8 by President R. E. Rose, veteran food control leader and Florida's state chemist, who later in the same session delivered his annual address. The address of welcome on behalf of Governor Hardee, of Florida, who was unable to attend, was given by Hon. Marion L. Dawson, of Tallahassee, state equalizer of taxes. Representing Miami in greetings, President E. G. Sewell, of the Chamber of Commerce, presented to the delegates a glowing description of the charms of the city and at the same time the keys to its hospitality.

The response on behalf of the convention was delivered by Sarah H. Vance, Louisville, Ky., director of foods and drugs and vice-president of the association.

In his opening remarks President Rose declared that he was pleased to greet the members of the association on the occasion of their twenty-fifth annual convention—an association composed of officials from every part of the union, charged with the execution of the dairy, food and drug laws and regulations of the nation and of the vari-

ous states, and also the representatives of the various industries engaged in the manufacture, preparation and distribution of the dairy, food and drug products to the people of the nation.

The speaker called attention to the fact that the organization was founded in 1896, when a few state officials met for the purpose of consultation as to the best method of enforcing the many different state laws then existing, little dreaming of the future scope and influence the official organization was destined to wield.

This meeting was held in Miami in 1896, the same year that Miami was incorporated as a city with 515 registered voters, President Rose said. He called attention to the fact that since that time a city has sprung from an uninhabited tropical wilderness within less than six months after the advent of the Florida East Coast railway, built by "that man of wonderful vision," Henry M. Flagler.

#### Food Official's Reliance on Scientist

President Rose outlined the aims of the organization, traced its history from its modest beginning to its present state of maturity and influence, described the role of the state of Florida in previous conventions, and, launching into the chief subject of his address, emphasized the necessity for open-mindedness and "watchful waiting" on the part of food control officials pending the ascertainment of new scientific facts. Legislation and law enforcement, declared President Rose, can only be handmaidens to the latest scientific discoveries, and should never precede them. Citing articles that have appeared in The American Food Journal, Captain Rose called particular attention to the subject of vitamins and the opportunity there is in this one field alone for further discoveries before legislation is enacted.

Mr. Dawson, in the course of his address of welcome, asserted that from time to time many conventions came to Miami and Florida, of all sizes and shades of importance, but that none could have more far-reaching results or touch more vitally the nation's welfare than those devoted, as this particular one was, to matters of food control.

"You stand a vigilant and fearless guard at the door of every home," Mr. Dawson said. "You protect the home from the invasion of foes that have needlessly destroyed more human life than has been destroyed on all the world's battlefields."

#### Crumbine on Inspector's Qualifications

In the afternoon of the first day's session, Dr. J. S. Crumbine, of the Kansas State Board of Health, spoke on the physical, mental, and moral qualifications that go to make



up a good food inspector. Dr. Crumbine stated that all these were of equal importance. The "golden rule," he declared, was basic in the profession of food inspection perhaps more conspicuously than in many others.

Another feature of the first session was the address of Miss Helen Louise Johnson, of Watertown, N. Y., an experienced newspaper woman and editor. Miss Johnson commented on the fact that those who live in certain parts of the North have many advantages not offered to those in the South. They may take advantage of three crops of green vegetables, she stated, and with opportunities for keeping cows, they can use milk more cheaply than other less favored sections of the country. Each person, moreover, she said, could have what was necessary in the way of variety in foods, namely, raw leafy vegetables twice a day and the same cooked once a day.

Miss Johnson attacked the extensive use of self-raising patent flours not only because they contained, she said, harmful compounds but also because they were often made of inferior grades of wheat.

#### Audience Stirred by Work of Botulism Commission

Notable among the addresses given Wednesday was that of J. C. Geiger, of the Botulism Commission, United States Public Health Service. Dr. Geiger, who is assistant surgeon general of the United States, gave his audience a complete history of food poisoning with special reference to the menace of botulism, as well as the work of the United States Government in isolating the bacillus and the measures that are being and should be adopted in the fight against this health menace.

"The Botulism Commission isolated the bacillus *Botulinus* spore from soil," said Dr. Geiger, "and it has since been proven an almost universal organism, found everywhere and very likely a natural inhabitant of the soil."

"The spore has been found on vegetables purchased in the open market, but since the poisoning is not caused by the spore itself, but by its growth, there is no danger of harm from it alone."

#### History of Food Poisoning

Dr. Geiger declared that even if consumers were reasonably sure that canned vegetables they had purchased were safe, they should take the added precaution of boiling the contents of the cans in an open container for at least 30 minutes, stating that this treatment would destroy poison, but not the spore, and that to destroy this the vegetables must be treated to at least 240 degrees of heat under pressure.

In the course of his address, Dr. Geiger asserted that commercially-canned products were safer than home-packed products and quoted statistics to prove his assertion. He declared that the majority of poisoning cases have been due to home-canned foods. He cited several cases which favored the persistence and multiplication of botulinus in canned foods, the most important being incomplete sterilization. This state, he said, applied to all canned foods, such as vegetables, ripe olives and spinach.

Another important fact brought out in the address of Dr. Geiger was that the spore in itself was not poisonous, but that its growth was what produced the poison, and that the poison by the proper heat being applied could be prevented from doing any harm although the spore itself should remain.

Dr. Geiger has made a special study of food poisoning and botulism and is thoroughly familiar with every detail connected with these subjects.

#### Tracing Poisoned Packages to Source

Following Dr. Geiger's address, R. E. Doolittle, chief of the central district, Bureau of Chemistry, Department of Agriculture, led the discussion with a paper entitled, "Some Observations on the Problem of Botulism in the United States." Dr. Doolittle made a plea for tracing to its source every package found to contain the toxin of the botulinus organism, because every other batch from the same factory would be a potential source of real danger. Such protection to the consuming public, said Dr. Doolittle, is the duty of every food control office and can only be accomplished through co-operation.

In the absence of Wilbur F. Cannon, food and drug commissioner of Denver, who was on the program to talk on the subject of "Problems of the Control Official, Methods of Enforcement, Nominal Fines or Imprisonment for Persistent Offenders," his paper was read, followed by a discussion by W. W. Randall, who represents and is in charge of the chemical laboratory of the Maryland Department of Agriculture.

J. Q. Emery, food and drug commissioner, Madison, Wis., also was not able to be present to discuss, "Standards for Ice Cream." Charles Morris, of the National Ice Cream Association, however, talked informally on ice cream standards. He was questioned at length by W. M. Allen, of North Carolina.

#### Ice Cream Standards Committee

After this discussion, the convention resolved to appoint a committee representing the state and federal governments and manufacturers to formulate standards for the manufacture of ice cream. The position of the Bureau of Chemistry in this connection was ably set forth by Walter G. Campbell, acting head of the bureau. This statement will be published in a future issue of *The American Food Journal*. In this case, as in many others in which Government officials gave opinions, regulations will not permit publication until official sanction has been made by the various departments represented.

#### Senator Ladd Unable to Attend

A telegram was read from U. S. Senator E. F. Ladd, of North Dakota, expressing his regrets at his inability to attend the meeting, and also one from Hon. Rivers Buford, attorney general of Florida, in which he said that he had been summoned to attend the United States court at Pensacola. Both were to have made addresses at the second



Delegates, Representing Many States in the Union, in Attendance



day's session. Senator Ladd at the morning session and Mr. Buford at the afternoon session.

Professor L. E. Sayre, director of the drug laboratory, University of Kansas, explained the methods of revision of the United States pharmacopea.

James Foust, food and drug commissioner, Harrisburg, Pa., followed with an attack on the Calder bill. Mr. Foust condemned the measure in ringing tones and declared that it was patently an unprecedented interference with the state's constitutional police powers. Its enforcement, in his opinion, would needlessly complicate the enforcement of state laws.

On Thursday, H. S. Paine, of the Bureau of Chemistry, delivered a paper on "The Use of Pectin in Food Products." This paper will likewise be published in *The American Food Journal* as soon as it is passed upon by officials of the Department of Agriculture.

The convention came to its close Friday afternoon with the election of officers to serve for the ensuing year. Captain R. E. Rose was again elected president of the association and three other "holdovers" from the current year's officers included: First vice-president, Thomas Holt; second vice-president, Sarah H. Vance; secretary, Cassius L. Clay. The newly elected officers included: Treasurer, E. L. Barnhouse; third vice-president, I. L. Miller. The elected executive committee included: President and secretary, E. J. Lea, Berkeley, California; W. S. Frisbie, Lincoln, Neb.; William Frear, State College, Pa.

Resolutions at the last session put the convention on record endorsing the Haugen bill in the form in which it has passed the House of Representatives.

The executive committee was also requested to prepare plans, as instructed at the St. Louis convention, to bring about a greater uniformity in state food laws.

At the association's banquet, held on this occasion at the Green Tree Inn, Captain Rose was toastmaster and introduced the speakers, the first being Frank B. Stoneman, editor of "The Miami Herald." Mr. Stoneman spoke of the development of south Florida and was followed by Dr. S. J. Crumbine, who gave a short talk on the human and humorous aspects of an inspector's life. B. B. Tatum gave a brief history of the reclamation of the Everglades. Others who made short talks were: Dr. W. G. Campbell, Henry I. Dawson, E. L. Barnhouse, J. R. Chittick, J. S. Abbott and J. D. Miller.

#### Hospitable Hosts

Throughout the convention representative citizens and organizations of Miami seized every opportunity to tender hospitality to the visitors. The Urmey Hotel, especially opened at this time because of the convention, acted as host. On the opening day of the conference the delegates accompanied by Miamians, took an auto drive to the beach and a dip in the Atlantic surf, many enjoying the experience of a salt water swim for the first time. On Wednesday, through the courtesy of the Miami Motor Club, the delegates were given an automobile tour of the city and the other many interesting places in and near Miami, including a number of orange groves and large estates. Official thanks of the organization were extended for these courtesies. One of the most interesting trips was that to the sugar plant and 800-acre plantation of the Pennsylvania Sugar Company in the midst of the Everglades.

Committees appointed by President Rose are as follows: Resolutions committee, Dr. J. S. Crumbine, chairman, Dr. M. M. Carrick, J. J. Clarke; credentials committee, Dr. R. E. Doolittle, chairman, A. D. Sibbald, J. R. Keeny; auditing committee, W. M. Allen, chairman, I. L. Miller, W. W. Randall.

## President Rose Urges More Investigation of Vitamines Before Forbidding Production of Important Food Products

**I**N his opening address to the convention, President Rose dealt briefly with the history of the association; discussed recent scientific investigations pertaining to nutrition, referring particularly to vitamines and made a strong argument against accepting present scientific knowledge of the vitamines as a basis for excluding from manufacture and sale any food products held to be deficient in these factors until more knowledge of them has been obtained.

His address in part follows:

This association was organized in 1896. A few state officials met for the purpose of consultation as to the best method of enforcing the many different state laws then existing, designed to protect the public from such abuses as misbranding and adulteration of foods and drugs, and particularly to prevent the manufacture of dairy products and other foods under insanitary, filthy conditions, from decomposed and filthy materials.

While this was originally an association of officials, it was not then (nor is it now) an official association. It was simply a voluntary association of national and state officials striving to correct the various abuses then so prevalent in all parts of the Union. It was organized largely for the purpose of calling the attention of the Congress to the necessity of a national law to protect the various states of the Union from the interstate shipment of misbranded, adulterated and insanitary dairy and food products and drugs.

#### Calling Attention to Needed Legislation

The labors of this association, aided by the then Chief of the U. S. Bureau of Chemistry, Dr. Harvey W. Wiley, and his able corps of assistants, and state officers, calling the attention of the people of the nation and particularly of the individual states, to the needed legislation, doubtless



Twenty-fifth Annual Convention of the American Dairy, Food and Drug Officials



had great influence in securing the enactment of the National Food and Drugs Law of June 30, 1906, which was probably the most beneficent law in the interests of the consumer of dairy, food and drug products and the legitimate manufacturers of such products, ever enacted by the Congress of the United States; a law which, rigidly and impartially enforced, insures to the consumer sanitary, unadulterated and truthfully labeled foods and drugs and protects the honest manufacturer from the unfair competition of insanitary, adulterated or misbranded material.

The enactment of the National Food and Drugs Law in 1906 was soon followed by similar laws by the various states. Florida, as many other states, had crude police laws prohibiting the manufacture or sale of certain adulterated or misbranded foods and drugs, with no officer charged with the enforcement thereof, with no protection from the interstate shipment of spurious material. In 1907, Florida enacted her first pure food and drugs law, differing but slightly from the national law. This law was amended in 1913 to comply more fully with the national law; adopting the national definitions, standards, rules and regulations and providing for co-operation with the national authorities.

Florida's first participation in the deliberations of this association was at Denver in 1909. This was probably one of the most important conventions of the association, being the second convention attended officially by representatives of the national control officials. If I am not mistaken, the meeting at Mackinac in 1908, was the first convention attended by the national officials charged with the enforcement of the National Food and Drugs Law of 1906. I have no record of a meeting in 1907.

#### Necessity of Annual Conventions

The proceedings of these two conventions show the necessity of this annual meeting of those charged by the nation and the various states with the execution of these necessary laws for the protection of our people from filthy, putrid, misbranded, light-weight, adulterated and sophisticated foods and drugs; at which can be discussed various methods of carrying out the clear intention of the laws, both national and state, for the protection first, of the consumer, and second, of the manufacturer of honest, clean, unadulterated and truthfully labeled foods and drugs.

The Mackinac convention will be long remembered by those who were present as a practical demonstration of the necessity of proper sanitation of all foods and drinks, particularly water supplies, as a part of the duty of the food, drug and health officers of the states and nation.

#### Findings of Denver Convention

The widespread use of partially decayed, fermented food stuff, manufactured under insanitary and filthy conditions, with added preservatives to disguise spoilage and prevent further decomposition, was definitely established at the Denver convention in 1909. Decayed tomatoes, filthy, non-sterilized milk and cream containers, careless handling of dairy products in dirty, insanitary milk depots and containers, long delays in transportation, from farm to factory or depot, the lack of sanitary precautions in transit and in the factory, were frequent.

The wide publication of these abuses by the press had a most salutary effect upon public opinion. Hence the demand for better sanitation in factories of all kinds, for clean, sterilized milk and other containers of food products with proper sanitation of factories, the use of pure or sterilized water in preparing foods and the use of only sound, non-fermented material has resulted, practically in abolishing these abuses.

#### General Enlightenment as to Food Conditions

The establishment of sanitary factories of all kinds and particularly the discontinuance of the use of fermented, partly decayed, filthy food material is now the rule and not the exception. The general public recognizes the fact now that clean food products, prepared under sanitary conditions properly sterilized, require no preservatives to insure their keeping qualities. The use of preservatives being unnecessary, its declaration upon the label (as required by

law) is looked upon with suspicion, and the preference is generally given to such foods as do not contain preservative. Hence the use of preservatives of any kind has been discontinued by most manufacturers of standard or choice foods.

The use of preservatives in food products, which was the principal "issue" at the Denver convention "with honors practically even," has been decided by public opinion.

While there still exist certain abuses, where unwholesome, fermented, partly decayed materials are treated (processed), these conditions are the exception. While "eternal vigilance is the price of liberty," it is also the price of clean and wholesome food products, truthfully labeled as to the quality and quantity of food in the package.

#### Office of Co-operation

The establishment of the Office of Co-operation by the U. S. Department of Agriculture, at the suggestion of the committee on co-operation of this association, has been of great assistance to state control officials, particularly in preventing the interstate shipment of adulterated or misbranded goods, and has also been of great assistance to the national authorities in preventing abuses of the national law. It has also greatly advanced uniformity in state laws, rules and regulations. The various decisions of the courts, and rulings of the U. S. Department of Agriculture have been interpreted and clarified. Notice of prosecutions, recommendations and the reasons therefor, prompt information to state officers of court decisions, have been furnished by the Office of Co-operation.

This national and state co-operation has been of great assistance in protecting the people of the nation and citizens of the states from fraud and deception and has reduced the former practise of allowing an illegal interstate shipment to be withdrawn from one state and passed on, to the detriment of another, probably an adjoining, state.

#### Malnutrition Incomplete Food Substances, Vitamines

Since the enactment of the national and state food control laws, much has been published by eminent biologists in reference to those unknown substances, not yet definitely isolated or definitely determined: the fat-soluble A, water-soluble B and C, generally accepted as necessary for growth and maintenance, the absence of which, it is charged by eminent scientists, is the cause of certain diseases—scurvy, beri-beri, rickets, pellagra, and other diseases charged to a deficient diet.

Recently much has been published pro and con as to the necessity of these three substances for normal growth and maintenance and particularly as to what food substances contain one or more of them in sufficient quantity to maintain growth and development. There is considerable speculation on what the effect of sterilization, purification, dehydration or other means of preserving foods now generally practised, is upon these substances.

I desire to call the attention of this association to the great changes that have occurred in comparatively recent years in manufacturing, preservation and sterilization of foods. Owing largely to the great increase in our urban population, decrease in our rural population, we have faced the necessity of preparing foods in such manner that they will not spoil or decay during the time necessarily required for their preparation, transportation, storage and consumption. We have effected the removal of certain parts subject to rapid decay, rancidity or spoilage: the removal of bran and germ, by recent methods of milling, from wheat, rice and corn; and the absence of the former "whole wheat" flour and corn meal, so common in our rural districts when the local grist mill with its old-fashioned mill-stones which ground the entire grain and furnished the grist unbolted to the consumer. The modern roller mill separates the bran, the germ, the shorts and the middlings from flour. It also separates the germ and harder parts from the corn meal, as whole meal including the germ will not "keep," in other words, soon becomes rancid and unfit for food; while polished rice has the bran and germ removed, leaving



only pure starch deprived of all its fat, protein and minerals.

It is well within the memory of a number of our members when the enormous quantity of our cotton seed was wasted; when its value as a food, particularly for dairy cows, was unknown; when, in fact, high fences were built around the "seed pile" to prevent the cows eating them; when millions of tons were thrown into streams to get rid of them; when the peanut was practically unknown as a food product except in a few Southern localities and distribution only by Italian vendors who sold a few tons, generally to children who were eager to obtain them and were generally ridiculed by their elders for their perverted taste for "goobers." Coconuts were seldom seen except in a few seaport cities; coconut and palm oil were practically unknown as excellent foods; the soya bean's value was known only to the Chinese, who have used it for food, particularly for its oil, for centuries.

To remind you of the vast consumption of these excellent food products in America, I have compiled a summary of the imports and exports of these valuable foods now consumed by our people during 1919. A few years ago these foods were comparatively unknown to the people of the United States and are still unknown to a vast number. It will be noted that we imported these vegetable food materials and oils to the value of \$112,320,000 and exported \$77,784,000, showing a consumption of \$34,536,000 worth by the people of the nations. I have also compiled the exports of butter, cheese, milk (condensed and dried), cream, oleo oil, oleomargarin and lard compounds, the total being \$206,685,229; aggregating the enormous sum of \$284,469,229, largely produced directly or indirectly from these various oils and oil materials produced on American farms and imported from foreign countries.

Until further research and experimentation be made and more knowledge obtained of these three obscure and little known vitamins A, B and C (with possibly a fourth); until we answer the questions: "Where are they found in sufficient quantity to support development and growth?" and "Does the processing of butter, the refining of vegetable oils, sterilization or dehydration remove these obscure and still unidentified substances?" any effort to restrict the production of these valuable compound foods (when the label tells "The truth, the whole truth and nothing but the truth"), would be an economic blunder. It would bear heavily upon the manufacturers of these foods and particularly upon the consumers of these valuable and much cheaper well-known food products; and it would cause an economic waste of most valuable food.

#### New Developments in Vitamines

If "a mixture of twenty-five per cent corn gluten (containing 35 per cent protein and 4.7 fat) and twenty-five per cent coconut press-cake (containing 20 per cent protein and 8 to 17 per cent fat) formed an efficient mixture and also furnished an adequate supply of water-soluble B vitamin" (1); if "bread made from a mixture of twenty-five parts of peanut flour (containing 26 per cent protein and 44 per cent fat) and seventy-five parts of wheat flour furnished adequate proteins and water-soluble vitamin for normal growth" and "the proteins of the peanut bread were utilized almost twice as well as those in the wheat bread" (2); if, in a typical case of pellagra, induced by a deficient diet, "the addition of 5 to 10 grams of casein of milk brought about a dramatic cure where the skin lesions were most severe" (3); if the addition of rice polish (containing 11 per cent protein and 9 per cent fat), or an alcoholic extract of rice polish will cure human beri-beri or polyneuritis so severe "that the bird or person is unable to walk or even stand, yet this state can be entirely cured by the simple addition of the rice polishings which are removed in the milling process" (4); then there is ample reason for demanding that more research and investigation be had in relation to these newly discovered, or at least newly discussed, important substances of such great nutri-

tive value, promoting as they do both growth and maintenance of animals, particularly man.

I am not a biologist, simply an agricultural chemist and engineer, more familiar with foods for plants (fertilizers) and feeding livestock, particularly calves and pigs. I do know, however, that skimmed milk, with peanut meal, cottonseed meal, or coconut meal (all containing considerable fat and protein—more than in "whole milk," which contains 3.5 per cent protein and 4.4 per cent fat) make, when fed intelligently, an excellent ration for young animals and do promote growth and maintenance.

Referring to the necessary mineral constituents of animal and plant foods—potassium, phosphorus and calcium—I desire to correct an error of an eminent biologist recently, before a Congressional committee:

"Phosphorus and potassium are the limiting factors in the soil of America. We have no deposits of phosphorus and no adequate deposits of calcium that will meet the agricultural needs of this country for fertilizer" (5).

#### Vast Phosphate Deposits in U. S.

To correct this evident error as to the vast deposits of phosphates in America, I quote from the Year Book of the U. S. Department of Agriculture, 1920, as follows, page 218: "Greatest Phosphate Deposits in the World:

"The United States is particularly fortunate in having larger deposits of this mineral than any other nation. As in the case of many of our other now highly prized possessions, however, the nature and value of phosphate rock was not recognized until relatively recent times.

"Not only does the United States possess the greatest phosphate deposits in the world, but our production of this basic fertilizer material exceeds that of any other nation. Besides supplying our own ever-growing demands, we have been aiding materially in maintaining the crop-producing power of European and Asiatic soils by our phosphate exports. These exports prior to the war amounted to from 500,000 to 1,000,000 tons annually."

Florida exported in 1913, 1,364,296 long tons of high grade phosphate rock. Shipments in 1918 were 2,067,000 tons (6).

#### Mountains Rich in Phosphorus

As high-grade phosphate rock contains an average of 75 per cent tri-calcium phosphate, carrying an average of 38 per cent calcium and 20 per cent phosphorus. We certainly have an ample supply in America of these two necessary elements; while no country has a greater supply of calcium than has America in her marbles and other limestones. The Appalachian mountains, the Alleghanys and Blue Ridge are principally composed of limestone.

#### Possibilities of Enormous Water Power

The enormous water power of the nation will doubtless in a few years furnish power sufficient to produce all the nitrogen, potassium and phosphorus needed on our farms, to say nothing of other valuable products, sulphur and aluminum, from our native deposits of these complex minerals; while the deposits of pure sulphur found in Louisiana and Texas, with doubtless similar deposits elsewhere, will furnish the nation with an abundance of all the necessary materials for economic agriculture and animal husbandry. No country on the globe has richer or more varied deposits of all minerals than has the North American continent. Its surface has barely been scratched by the geologist and mineralogist.

No one more fully appreciates the value and the necessity of the dairy cow to improve and maintain the fertility and productiveness of our farms than myself; which truth I taught and practised for many years.

#### Agriculture, Oldest Art, Youngest Science

Agriculture, while the oldest art known to man, is the youngest science. More has been discovered of agricultural science during the past century, in fact, within the past fifty years, than was known since Adam, and much has still to be discovered.

(1) Dr. V. K. LaMer, The American Food Journal, July, 1921.

(2) Dr. V. K. LaMer, The American Food Journal, July, 1921.

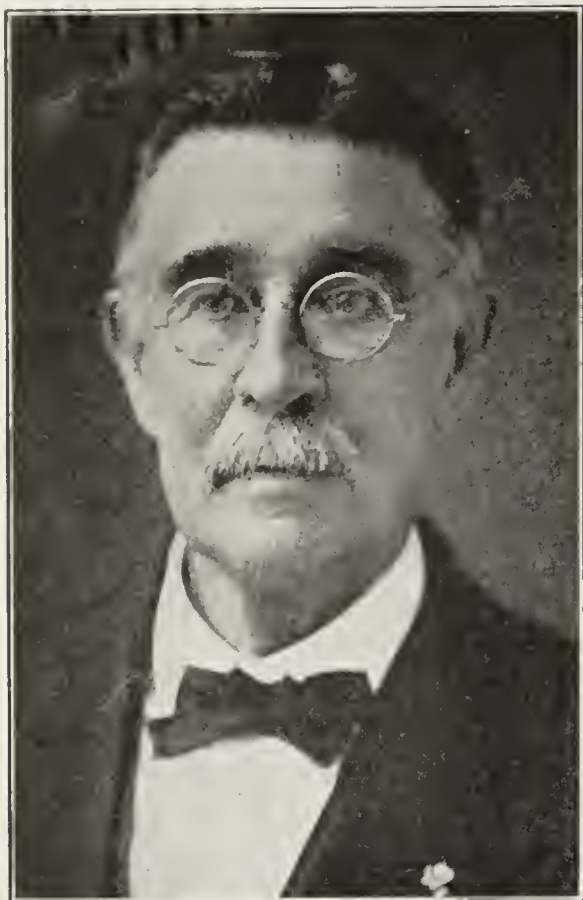
(3) Dr. V. K. LaMer, The American Food Journal, July, 1921.

(4) Dr. V. K. LaMer, The American Food Journal, August, 1921.

(5) Dr. E. V. McCollum, House Committee on Agriculture, H. R. 6215, June 13, 1921.

(6) Florida Geological Survey, 1920.





R. E. Rose  
President



Sarah H. Vance  
Vice-President



Thomas Holt  
Vice-President

## Food Commissioner Foust of Pennsylvania Declares Calder Bill Should Be Defeated

**I**N his address before the convention, Commissioner James Foust of Pennsylvania emphasized what he termed the impractical features of the Calder bill and designated it as an attack upon the state's constitutional police powers. His full speech follows:

The Calder bill is, to my mind, a dangerous and far-reaching measure and should be defeated.

It nullifies the rights vested in the state under its police power.

It renders null and void all state and municipal laws dealing with foods, drugs, medicines, and commercial cattle feeds when shipped in interstate commerce in package form, even though such products violate state or municipal laws.

I believe it would be a mistake to interfere thus with the states and municipalities in protecting the health of the people. The framers of our Government wisely intended that the protection of the health of the people should be vested in the state under its police power and that such police power should not be interfered with by the Federal Government.

This bill is designed to remove all foods, drugs, medicines and commercial cattle feeds shipped in interstate commerce in package form from the regulative power of the several states, until the individual package has been sold to the ultimate consumer.

The State of Pennsylvania, in the exercise of the police power reserved by it, has imposed certain restrictions upon the sale of foods, drugs, medicines and commercial cattle feeds which the Legislature of the State deemed necessary for the protection of its people. These regulations at present apply to all goods manufactured and sold in Pennsylvania and to all goods manufactured elsewhere and shipped into Pennsylvania as soon as such goods have lost their interstate character. The regulations are more exacting than those of the Federal law, and the proponents of this Senate bill desire to have the interstate character of goods preserved until the goods reach the ultimate consumers and thereby avoid compliance with state laws.

The Supreme Court of the United States has on several

occasions pointed out that the regulation of the sale of foods, drugs, medicines and commercial cattle feed is a matter which properly belongs to the state and should not be interfered with by the Federal Government, excepting in so far as is absolutely necessary to prevent interference with interstate commerce.

Congress itself has also recognized this principle by the enactment of the Wilson Act of August 8, 1890, Chapter 728, 26 Statutes at Large 313, and by the Act of May 9, 1902, Chapter 784, 32 Statutes at Large 193. Those acts specifically provided that intoxicating liquor and oleomargarin when shipped into any state for sale there should "be subject to the operation and effect of the laws of such state or territory, or the District of Columbia, enacted in the exercise of its police powers to the same extent and in the same manner as though such articles or substances had been produced in such state or territory, or the District of Columbia, and shall not be exempt therefrom by reason of being introduced therein in original packages or otherwise." The enactment of the Calder bill would amount to a repeal of those acts and would be a complete reversal of policy.

We have at the present time in Pennsylvania a very efficient and satisfactory enforcement of our pure food laws. The enforcement of the Federal food and drugs law and of the prohibition law is notoriously poor. To remove the regulation of the sale of a large part of our foods, drugs, medicines and commercial cattle feeds would merely substitute inefficient regulation in place of effective and satisfactory enforcement of the state laws.

There is a question in my mind as to whether an act such as the Calder bill would be constitutional. Its effect is to extend federal control to the field of state commerce. That is, it declares a certain portion of state commerce to be interstate commerce. If it should be held to be unconstitutional, it would, of course, not thereafter interfere with our police powers, but its enactment would occasion tedious and expensive litigation.



# Some Essential Qualifications of a Good Food Inspector

## Combination of Physical, Mental and Moral Virtues Necessary for Efficient Service—Golden Rule, a Fundamental Principle

By S. J. CRUMBINE, M. D.

Executive Officer, Kansas State Board of Health

THE old political slogan, "To the victor belongs the spoils," is gradually giving way before the insistent demand of the public that the best trained men are none too good for public service. Some of the reasons why reform along these lines moves slowly are that, now and again, some real genius has developed from a purely political appointment, and thus the methods of the old-time politician have been justified; or, the service, itself, has been so unattractive by reason of legislative limitation, both as to salary and possibilities of development, that specially trained men could not afford to seek employment in this field. Thus merit and training in securing places in public service as chief requisites for appointment have been slow of adoption.

In considering the situation in relation to the appointment of food, drug and dairy inspectors, we find that the same conditions prevailed in the early years of the food and drug control movement, but we are glad to record the fact that in many of the states the merit system has supplanted the spoils system with a corresponding improvement in the character and quality of the service rendered. Now that most of us have the opportunity of selecting our inspectors on a basis of competitive examination, it might be profitable to discuss some of the essential qualifications of a good inspector.

For convenience we might consider a division of the subject into three parts—the physical, mental and moral values of the essentials of a good inspector.

### Necessary Physical Qualifications

First of all, an inspector should have what we call "a good personal appearance," on the theory that first impressions are often permanent, in that they affect the intuitive judgment of those with whom he comes in contact. It is apparent at once that the personal physical appearance should be pleasing and reassuring. This would mean that the person should be reasonably well-dressed and should be clean and tidy in appearance, and one cannot be clean in appearance without having clean personal habits.

A good inspector should be of strong physique—not necessarily large or ponderous, but physically strong enough to endure the hardships of travel, the constant change in diet and interference with regular rest and recreation. Rugged health and endurance should be the physical endowment of every efficient inspector. No one can maintain rugged health in living the life of a traveling man unless regard is taken of the laws of health. He cannot work hard all day and rob himself of the necessary sleep and rest by habits of dissipation, even should those habits be harmless in themselves. Clean habits, with a due regard for personal hygiene, cleanliness of hands and linen should go hand in hand with orders made by him to those who are violating the sanitary laws or ordinances in the inspector's jurisdiction.

### Avoidance of Careless Manners

In other words, an inspector who is careless about his personal habits and appearance will not make a very great impression upon those whom he assumes to criticize because of insanitary conditions. It would seem to be entirely possible for every inspector to systematize his work and his reports so that due regard may be given to his proper rest

and meals. Only a minimum amount of discomfort and irregularity need result from the necessity of constant change. It is assumed, of course, that those who direct the movements of inspectors must likewise give proper consideration to the amount of work that the inspector may be expected to accomplish in an efficient manner within a given time.

It is somewhat difficult to classify good manners as to whether they belong to the physical, mental or moral qualifications under discussion but, generally speaking, I think it may be said that good manners is the outward physical expression of a presumably clean, wholesome, healthy man. Certainly good manners with all the term implies—courtesy and a proper regard for the conventions of good society—is one of the greatest physical assets which any inspector may be fortunate enough to possess, and this virtue may be possessed by anyone regardless of size or appearance.

Perhaps no other virtue will at once disarm a suspicious or antagonistic person, or will so quickly open the door of welcome and good fellowship as good manners. Too often inspectors assume a familiar or brusque attitude which must sooner or later end in their discomfiture. It always pays to be a gentleman, not necessarily obsequious nor yet entirely and strictly conventional, but a plain American Christian gentleman.

### Mental Make-Up Important

Inherited mental characteristics, natural aptitude and home training will do much toward developing the mental qualities that should be the possession of a good inspector. But however fortunately one may be thus endowed, if he be not mentally trained with a reasonably good education, he will always suffer a tremendous handicap. Education, in its broad sense, not only assumes a speaking acquaintance with at least a part of the accumulated knowledge of the ages, but it means more particularly such training and disciplining of the mind that will permit straight thinking, clear reasoning and the ability to express one's thoughts intelligently and accurately. I believe most misunderstandings may be attributed to a lack of clear and accurate expression. Certainly this is true in inspection work, and time and again a dealer whose reputation for truth and veracity is unquestioned, has stated that Inspector A had told him so and so concerning a matter in which the regulations were clear and explicit after Inspector B had checked him up on what appeared to be a violation of a particular rule, thus conveying an entirely different idea or impression concerning the application of the same rule. Similar numerous instances of misunderstanding can be charged to the inability of an inspector to express himself clearly and accurately.

### Technical Knowledge of Manufacturing Processes

Not only should a good inspector be in possession of the kind and character of education referred to, but he should have some technical knowledge of the manufacturing processes of foods and drugs and a wide knowledge of their production. Inspectors should be students, and if they are good students, this technical knowledge will be a sort of accumulation, the result of contact with people who know and the acquisition of interesting facts through reading.

No less important mental essential to that of education is a trait we call "poise" or "tact." We can all visualize a highly educated and well trained individual who, if he lacks this cardinal virtue, would be like the proverbial "bull in a

\*Read before the Association of American Dairy, Food and Drug Officials, Miami, Florida, November 8, 1921.



china shop." A good inspector must be able to adjust himself quickly and constantly to the varying moods and the different mental attitudes and capacities of those whom he inspects. He must be a diplomat of the highest order if he is thus to adjust himself.

#### Talking Too Much

Most inspectors talk too much, and thereby bring not only themselves, but the law, into contempt. I have for some time thought that the average inspector would profit by a course in modern psychology and applied sociology. Once upon a time, many years ago, a very wise man said: "A word fitly spoken is like apples of gold in pictures of silver."

It is difficult to place the virtue of industry, but I believe it more properly fits into the classification of moral qualifications of an inspector, for one may have a perfect physique and robust health and be mentally equipped in the essential fundamentals and yet be a slacker and loafer because of a lack of moral qualifications. Industry, then, or a "genuine love for the job," must be classed as one of the essential qualifications of a good inspector.

#### Intellectual Honesty

Another moral essential is that of intellectual honesty. Not only is it necessary to maintain honesty in keeping and submitting his expense accounts and a record of his travel and work, but equally important is intellectual honesty as applied to his dealings with others—a rugged honesty that will not countenance side-stepping a duty, or placing expediency over against duty—that can weigh and judge events, things and persons in something like the same manner as Justice is depicted blind-folded holding the scales. Such an inspector is a joy to his department and the one who is called upon to do any extra difficult and hazardous task. Such a man has of course, a keen, moral perception. It is not necessary for him to consult the dictionary to learn the difference between the meaning of the words "right" and

"wrong." He has uncompromising principles of right and a solid foundation to stand on. He knows where he is going, for he is headed in the "right" direction.

The great statistician, Babson, has recently called the business world's attention to the lamentable fact that "big business" is too often both unappreciative and neglectful of the spiritual values of life, and that the world's present chaotic condition will never be entirely and completely adjusted until religious principles are adopted as business principles. I am not attempting to quote Babson literally, but merely to express his thought. I am reminded too, that centuries ago, another greater than Babson, laid down a rule of conduct which has since been known as the "Golden Rule," and so far as I have been able to learn, this rule of conduct has not been revised or abrogated. I am also of the opinion that another of the essential qualifications of a good inspector is one who will practice the Golden Rule.

#### Loyalty, Crowning Virtue of Inspector

In conclusion, I wish to mention one other and which, in my judgment, is the crowning virtue of a good inspector, and that is loyalty—not only loyalty to his department and his associates, but loyalty to his friends, acquaintances and, above everything else, to his job and all that it includes. Loyalty as applied to citizenship is the highest eulogy that can be paid to any individual, for it means that nothing can swerve the truly loyal citizen from his devotion to duty and to his country. Loyalty is the most precious virtue of friendship, for it is one which will endure through evil and good report, through success and disaster. A loyal friend accepts without question and will sacrifice and endure much for the sake of a friendship. Happy is the commissioner whose inspectors are loyal, and if, perchance, he has inspectors who are endowed with all the qualifications herein set forth, we may know at once that food, drug and dairy control in such an inspector's district is of the highest possible service, benefiting not only the consumer but likewise the manufacturer and dealer.

## The Problem of Botulism in the United States

### Constant Vigil Against Poison Menace Necessary Among Manufacturers, Distributors and Inspection Officials

By R. E. DOOLITTLE,\*

Chief, Central District, U. S. Bureau of Chemistry

ONE of the most important points in the consideration of the subject of botulism is the apparent wide distribution in nature of the bacillus botulinus, the micro-organism which under certain conditions produces the poisonous toxin so fatal to animal life. Reports of investigations of recent years show that this organism has been found in practically every community where careful studies have been made. Recently, information has been given us that it has been found in virgin soils at high altitudes. In other words, this organism, like many others, is widely distributed in nature and is therefore a constant potential source of danger.

Fortunately, certain rather uncommon conditions appear necessary for its proper development with the attending production of the poisonous toxin. In the first place, the bacillus botulinus is an anaerobe, i. e., it does not grow in the presence of free oxygen, a condition not commonly encountered in food products. The botulinus poisoning cases in this country have been confined principally to canned foods where a fairly complete exclusion of oxygen is attained.

Similarly, in Europe the cases reported have been traced to sausage in which the finely cut and closely packed flesh created a similar condition. The anaerobic condition of these products may be supplemented or even wholly brought about by the rapid development of accompanying aerobic bacteria which consume the oxygen and thus create a favorable condition for the growth of the anaerobic organisms. Further, the bacillus botulinus does not grow well in the presence of high concentrations of sugar, salt or acids, conditions which are commonly found in food products. Therefore, the actual danger from this organism is greatly lessened, and the danger is not so much dependent upon the wide distribution of the organism as it is upon the conditions necessary for its development.

Another point in this connection is the rather commonly made statement that the organism is killed at the temperature of boiling water or at an even lower temperature. This may be misleading. The facts are, as I understand them, that the toxin secreted by this organism is destroyed at the temperature of boiling water, this varying somewhat with the different strains of the bacillus. The bacillus botulinus is a spore-forming organism, and the spores are not,

\*From a discussion delivered before the twenty-fifth annual convention of the Association of Dairy, Food and Drug Officials, Miami, Fla., November 9.



or at least may not, be destroyed at the temperature of boiling water. Thus we may have a condition where a food product is heated to the temperature of boiling water and the toxin destroyed. If this food be consumed immediately no ill effects would result but if this food is allowed to stand under certain conditions the spores may develop, toxin again be secreted and the food made dangerous.

Now, bearing in mind the wide distribution of the botulinus micro-organism and its resistant characteristics, as found in foods, the responsibility of manufacturers and distributors of food products is very apparent. Every care and precaution must be taken by both parties to prevent contamination of our food products with this organism. This depends to a great extent upon the education and intelligence of the plant operator.

#### Manufacturers Largely Unaware of Danger

It has been our experience that manufacturers and distributors of food products have little or no information concerning the danger of contamination of food products with the botulinus organism and a very hazy and vague idea of its dangerous character. This may be due in part to the fact that research workers on this subject have been cautious in reaching conclusions and making public their findings.

Our responsibility as food control officials in matters of this kind can scarcely be over-estimated. Every official is confronted with the possibility that the next outbreak of botulinus poisoning may occur in his own state or his own city. Our duties, it seems to me, are two-fold: First, a proper supervision over manufacturing processes and second, proper surveillance of products on the market.

Under the first, it is essential that we use every means available under the provisions of our food and sanitary laws to prevent the contamination of our food products by the botulinus bacillus and similar micro-organisms. This covers not only the character of raw materials used, sorting, packing and factory sanitation, but especially sterilization in the case of canned and similar foods.

Under the second, it is incumbent upon us to examine carefully all lots of foods whether in the possession of manufacturers or packers, jobbers, wholesalers or retailers for evidence of spoilage and particularly, the products of those manufacturers or packers whose raw material, factory conditions or manufacturing process is questionable. The nearer this inspection can be made to the source of production the more effectively the situation can be controlled. In other words, the more the distribution is advanced, the more difficult it becomes to locate the different lots of suspected goods and fix the penalty upon the responsible party. One of the great difficulties we encountered in our work in the outbreaks in the Central States was the identification of the suspected goods with the actual manufacturer. Frequently, the goods that are distributed by the retailer do not bear the manufacturer's label and often no identifying marks by which the retailer, jobber or wholesaler can identify the source of the product. Such a situation is difficult to handle without doing an injustice to an innocent party in the transaction. It would appear, however, that this condition will exist until such a time as manufacturers can be induced by law or otherwise to identify each package of goods in some way with the particular factory where manufactured.

#### Off-Grades, Flippers and Odd Lots

We all know that there are shipped into interstate commerce or sold locally large quantities of food products known by the shipper or seller to be abnormal, such as off-grade goods, swells, leakers, flippers, mouldy, damaged and heated products. I appreciate the great difficulties that confront the food and health officials in maintaining a proper supervision over this class of products at the present stage of food control work.

But I wish to call your attention to the fact that in our work the botulinus contaminated products have not been found as a single or a few spoiled packages among a great number of sound packages of food, but rather an occasional toxic sample among many spoiled packages from the same

lot of goods. For example, the canned spinach which caused the death of two persons and the illness of three others at Battle Creek, Michigan, in February, 1921, consisted originally of a carload of 900 cases of No. 10 cans—six cans to the case—shipped from Oroville, California. On the arrival of the car in Kansas City, Missouri, the product was in such a bad condition from the large number of swollen cans present that the freight agent was requested to recondition the car by sorting out the swollen cans which he did, resulting in the destruction of 590 cases. The 310 cases remaining were forwarded on to Battle Creek where on arrival they were again reconditioned by the consignee and 20 more cases destroyed as swells. In other words, out of an original shipment of 900 cases, 610, or over two-thirds, developed spoilage between the time of packing and receipt by consignee. The deaths resulted from spinach taken from one of the cans which was passed as satisfactory by the consignee. Extensive spoilage means faulty sterilization and any lot of food showing any considerable amount of spoilage is dangerous. Such goods should all be withdrawn from the market, carefully sorted, and that portion apparently sound, thoroughly reprocessed before distribution.

#### Wide Variation in Virulence

And now, in concluding, there is one additional phase of this question that I desire to emphasize. It may be theoretical on my part and possibly Dr. Geiger and other investigators will say that I have no basis for my conclusions. But I believe there are some facts that support it and certainly it is a reasonable deduction. It is well known that the toxin of the bacillus botulinus is very poisonous, but there is reason to believe that there is perhaps a wide variation in which might be termed the virulence of this organism. It is known that the bacillus botulinus may develop slowly or very rapidly upon artificial media, that under certain conditions it may produce perceptible amounts of toxins while under other conditions the amount of toxins may be relatively small. Several so-called strains of the organism have been identified. May not, therefore, some of the others and lesser ills and intestinal disturbances sometimes attributed to the food we eat and sometimes unexplained, be due to the presence of this organism? Owing to its anaerobic character, the detection of this bacillus is difficult and requires experience and skill.

#### Cooperation with Municipal Authorities

Then, finally, there is one point in connection with all our work on the botulinus poisoning cases in the central district that stands out above all others, and that is the great advantages that have come from our plan for cooperation with state and city food and health officials. It is almost marvelous, when one stops to think, that when emergencies, such as these outbreaks were, arise, there is at the command of every state, city and federal official an army of trained inspectors and scientists who on almost a moment's notice can be put into the field to investigate shipments and remove from the market suspected products. We know that in this manner products were taken off sale which actually contained the poisonous toxin of the botulinus organism, and I feel that if this was the only result, our plan of cooperation ever accomplished, it was worth all the time, effort and money that has been expended. Cooperation in handling situations of this kind is absolutely necessary.

If a package of food is found to contain the toxin of the botulinus organism every other package of food from the same batch, and I believe I am warranted in saying from every other batch from the same factory, is a very potential source of real danger and should be traced to destination and examined at least for evidence of spoilage before being permitted to go into consumption. Such protection to the consuming public is our duty and it can only be accomplished through cooperation. The plea which I wish to make in this connection is that such action be taken promptly. Time is an important factor in such cases in order to collect samples of foods, empty containers, etc., on the premises, trace the carrier of the toxin by epidemiological studies and locate and embargo suspected goods. The quicker all agencies can take up the work, the more satisfactory the results will be.





Winifred Stuart Gibbs  
Director, Food Service Bureau

## New Service for Food Manufacturers and Their Public

### The American Food Journal will Supply Much-Needed Advice on Converting Nutritional Values into Sales Values

lecturer at Teachers' College, Columbia University.

During the war, she was called in conference by the War Labor Board and other departments of the Government. Since returning from Washington, Miss Gibbs has been working on a consulting basis, organizing independent nutrition projects for individuals and organizations and writing for magazines including the "Ladies Home Journal," "Boston Cooking School Magazine," "Modern Priscilla," etc. She is the author of several books on nutrition including, "Economical Cookery," "Food for the Invalid and Convalescent," "The Minimum Cost of Living" and "Chubby Children and How to Grow Them."

#### Adaptability to Specific Cases

The unusually wide background and experience of the director will insure for the Food Service Bureau almost perfect adaptability to particular cases as they arise. Different methods will be employed, where different parties are concerned. Problems of the manufacturer will be handled otherwise than the problems of the advertising agency. In certain cases where publicity is seen, as a result of investigation, to be the chief essential, this channel will be utilized to the maximum advantage. Where education of the consumer is deemed the prime requisite, this will be undertaken in as expeditious a manner as is possible.

A chief feature of the service is that it will be made to appeal to both the housewife and professional food educator, since it plans to provide accurate information about each food product and its place in the scheme of nutrition, rather than to give more or less fragmentary facts concerning any one food.

Typical of the methods of the Food Service Bureau will be the establishment, where called for, of individual bureaus for each distributor. The service will assist the client by securing a suitable site for initial activities, preferably in some well-established retail center where the public reaction may be tested.

A nurse will be placed in charge and personally supervised by the director of the bureau, which will provide lesson leaflets, direct the gathering of data and arrange for city-wide publicity, making all professional contacts with municipal, civic and educational institutions.

The director of the Food Service Bureau will make herself responsible for organizing each local bureau, and for putting it on a permanent basis, at which time it will be turned over to the home economics expert, nurse or other worker employed by each firm. The director of the service will then act as adviser or not, according to the original arrangement.

#### Varied Aspects of Service

The establishment of such bureaus will constitute only a portion of the work rendered by the Food Service Bureau. This method may be dispensed with entirely for others more suitable to the particular needs. The privileges of the service may be secured on a fee basis.

Further particulars regarding the scope, fees and other details of the Food Service Bureau may be obtained by addressing Winifred Stuart Gibbs, Food Service Bureau, The American Food Journal, 25 East 26th Street, N. Y. C.

**T**HE AMERICAN FOOD JOURNAL announces the establishment under its own auspices of a Food Service Bureau for food manufacturers, advertising agencies with food accounts and all persons interested in converting nutritional values of products into actual sales values.

Through the medium of this department, which is to provide an entirely new connecting-link between the food producer and his public, it is planned to enlarge the patronage of each manufacturer contracting for the service, by planning, organizing and directing educational campaigns and programs adapted to specific needs and showing the place of each product in a well-rounded dietary.

As a result of the unparalleled facilities for professional research in New York City and the modern scientific resources already at the disposal of the Food Service Bureau, The American Food Journal will be prepared to make extensive investigations into the nutritional and dietetic possibilities of any food product and those channels through which its findings may best be made known to the public.

#### Wide Scope of Service

The Food Service Bureau will undertake the preparation and distribution of leaflets, circulars, pamphlets, and books of a technical nature; the planning and execution of publicity campaigns for specialized and technical media such as chemical, dietetic, medical or women's publications; the direction of exhibits or lecture courses; and, where advisable, the establishment of individual bureaus giving prospective purchasers of a product sound and scientific information in matters of nutrition.

When it is desired, investigations will be made into the feasibility of expanding the market for a given product and introducing it to new fields, such as the hospitals and charitable institutions. Since the service will be in touch with the leading scientific minds of the country, it will endeavor to exploit to full commercial advantage their favorable advice and recommendations as to the nutritional character of the various foods.

#### Nutritional Expert as Director

The work of the Food Service Bureau will be personally directed by Winifred Stuart Gibbs, well-known in the dietetic world as nutrition expert, organizer and magazine writer. Miss Gibbs is a graduate of the normal course in domestic science at Mechanics Institute, Rochester, New York, and former student at the University of Rochester. She began her professional work as teacher of cookery in the Rochester public schools.

After two years as resident teacher of dietetics at the Rochester City Hospital, she returned to New York, where she founded and for ten years directed a home economics department for the New York Association for Improving the Condition of the Poor, at the same time serving as



# Chicago Convention Discusses Widened Scope of Dietetics

## Closer Relationship with Professions of Medicine, Dietotherapy, and Social Service Emphasized by Addresses at Annual Gathering of American Dietetic Association

By ANNA E. BOLLER

**F**IVE hundred representative nutrition experts from all parts of the country attended the sessions of the fourth annual meeting of the American Dietetic Association, held in Chicago, October 24-27, at the Hotel La Salle.

A three day program embracing many unusual features and including papers and discussions on administrative and teaching problems, dietotherapy and social work, indicated the widening scope of nutritional work and left no doubt in the minds of the assembled members as to the increasingly closer relationship existing between dietetics and the professions of medicine, nursing and social service.

In the keynote speech on Monday evening, October 24, Mary de Garmo Bryan, president of the Association and editor of the Journal of Home Economics, praised the work of the American dietitians and stated that the Association was doing pioneer work in raising dietetic standards throughout the country. More than any other one factor, Mrs. Bryan declared, this work was helping people realize the professional character of the dietitian's services.

Summarizing the accomplishments of the Association during the past year, Mrs. Bryan called attention to the recent completion of two courses in dietetics for nurses and the establishment by the Association of a preliminary course for dietitians in universities, colleges and technical schools. Future plans of the organization, Mrs. Bryan stated, are already being discussed. A list of hospitals will be compiled, and a classification of these according to size, equipment and dietary standards will be made. Such a list would enable students to choose hospitals offering the best possible training.

### Mrs. Bryan Re-elected

At the business meeting, October 26, Mrs. Bryan was re-elected president of the Association. Other officers elected were: first vice-president, Helen Pope; second vice-president, Octavia Hall, Peter Bent, Brigham Hospital, Boston, Mass; secretary, E. M. Geraghty, University of Illinois; treasurer, Ellen Gladwin, Jefferson Hospital, Philadelphia.

On the opening morning Mary A. Lindsley, manager of



Mary de Garmo Bryan  
President



Lulu Graves  
Honorary President

the Grace Dodge Hotel for women, Washington, and chairman of the administrative section, had charge of the discussion, which was on the question of equipment treated from the point of view of the institution, and housewife. Margaret Proctor, of the Y. W. C. A., showed where many mistakes are made in planning kitchens—in faulty sizes of sinks, incorrect heights of tables and cupboards and improper arrangement of the equipment. She emphasized the "humanizing" of the home and commercial kitchen.

Others on the program were George A. Smith, Chicago Range Company, and Agnes Gleason, manager, Parkway Tea Room, Chicago. The social service section meeting and round table discussion were under the direction of Lucy Gillette, of the Association for Improving the Condition of the Poor, New York City.

### Racial Customs and Americanization

S. P. Breckenridge, associate professor of the University of Chicago, in reply to the question "to what extent should racial customs enter into any Americanization scheme?" said that they should enter into it "to the greatest extent rendered possible by the knowledge, training, and sympathy of the persons putting forth the effort." The more interesting questions in this connection, however, Miss Breckenridge continued, were, how can the knowledge be increased in amount and rendered available to a greater number of persons and how can the sympathy and tact necessary for the task be directed towards the special services of the families that are either foreign-born or at least not adjusted to the life of the community.

### Nurses and Dietetics

At the meeting of the section on education under Dr. Ruth Wheeler professor of nutrition, University of Iowa Medical College, Iowa City, Iowa, standardized courses for nurses and dietitians were presented. One of the very important subjects discussed at this section was, "What Nurses Need to Know About Dietetics." Helene MacMillan, principal, School of Nurses, Presbyterian Hospital, Chicago, and prominent leader in the nursing field, offered many



valuable suggestions toward making a broader course in dietetics for nurses. She stated that the dietitian as an educational director must feel increasingly responsible in helping to formulate the standards for the nurses education. Suggestions for both practical and theoretical work were offered emphasizing the restriction of too much routine work for nurses.

Following this, there was an interesting discussion of an outline for student nurses' dietetics course planned with the idea of using the project method and presented by Katherine Fisher, Columbia University. Student dietitian courses were presented by Octavia Hall, Peter Bent, Brigham Hospital, Boston; Mary Foley, Rochester Hospital, Rochester, Minn.; Abby Marlatt, University of Wisconsin, gave an outline for two- and four-year preliminary courses for dietitians.

At the dinner meeting Monday night, Mary de Garmo Bryan, president of the Association, outlined the object of the Association, the work that had been done during the past year and the plans for the coming year. She expressed confidence that the convention would help to raise the standards of dietetics throughout the country.

Following this, Harriet Vittum, Northwestern University Settlement, gave an inspirational talk on "professional spirit."

#### Diets and Moods

A feature of the evening was the discussions of diet in its relation to mood. In this connection, Madison E. Bentley, professor of psychology, University of Illinois, said:

"The moods stand closely related to the emotions. Both contain strong feeling and both involve the organism in a diffuse and general way. Anger, joy and fear are typical emotions; petulance, depression and good humor are typical moods. Moods usually last longer than emotions, and they lack the reference to specific events and situations which characterizes the emotions. The mood is a tuning or toning of experience, and it is suffused with pleasantness or unpleasantness.

"Moods are made up in large measure, of the same materials that underlie the bodily perceptions of hunger, lassitude, satiety, thirst, appetite, nausea and the like. These simple materials are pressure, pain, warmth, cold, heat, strain, fatigue and the simple feelings. In such bodily perceptions as hunger, thirst and satiety, the function is to color and to tone our experiences and to incline us in one direction or another.

#### Bodily Causes of Temperament

"After this analysis of the moods into their simple ingredients, the psychologist proceeds to study their kinds and varieties and then to relate the several kinds to their bodily conditions. He finds two varieties; the reflective and the anticipatory moods, which display only a casual relation to the visceral functions, and two other varieties, the quiescent (e. g. gloom, tranquility, good humor) and the turbulent moods (e. g. petulance, restlessness, gaiety) which draw largely in their origin upon those organic sensations, which are aroused by the processes of digestion and secretion. The more detailed and accurate description and explanation of these last two classes await the co-operative study of the psychologist and the physiologist of nutrition."

"Shoemakers, stick to your last," said Dr. C. P. Howard, professor of internal medicine, State University of Iowa, in another talk, emphasizing the necessity of the dietitian not to undertake more work than she can perform. In a paper, entitled, "The Sphere of the Dietitian," Professor Howard stated that the dietitian's scope of work is that of planning diets and not diagnosing diseases.

Professor A. J. Carlson, of the University of Chicago, in another paper, attributed our dislikes for certain foods to "psychic idiosyncrasies." One of the most important tasks of the dietitian, he stated, is the removal of these imaginary dislikes of certain foods. "This is especially true," Dr. Carlson said, "with children, for when you consider the almost universal anemia among them in civilized communities you may realize that the safety of modern

society depends upon training the child to be more omnivorous—that is, to be less finicky about food."

#### Nervous Conditions to Social Problems

Dr. Sidney Kuh, a leading neurologist of Chicago, in a paper entitled, "Relationship between Diet and Nervous Conditions to Social Problems," stated:

"There are no so-called nerve foods, i. e., articles of diet that have a specific beneficial effect in functional nervous trouble. Diet is usually determined by physical condition of the patient. Coffee and tea are harmful if given in any but very moderate quantities—coffee excites, tea stimulates. Alcohol is on the whole much more harmful than beneficial, and with neurotic patients, there is the danger of establishing a habit.

"The Volstead Act has had a bad effect, since it is prohibition which does not prohibit. It substitutes for the bad whiskey of years ago the worse whiskey of home manufacture. It has not materially decreased alcoholism in men, and has lead women, who under present conditions have greater difficulty in securing whiskey, to an increased use of narcotic drugs.

#### Harmful Effects of Monotonous Diet

"Monotonous diet," continued Dr. Kuh, "though it contains ample nutriment, often leads to loss of weight, anemia and tuberculosis. Varying the diet as much as possible, is necessary in all cases. Also psychic influences are important in assimilation of foods, particularly in cases of neurotics. Hence appetites are influenced not only by methods of preparing foods, but almost equally by manner of serving them, the presence of congenial company, pleasant conversation, etc. In undernourished neurotic patients, butter should be used freely, both on bread and in the preparing of sauces, soups, vegetables and in the cooking of meats. Fat meats are not desirable. Yolk of egg is very valuable. Likes and dislikes of patients should be considered. A great deal of harm is done in cases of so-called nervous dyspepsia by too restricted a diet.

"In epilepsy, it is not necessary or desirable to eliminate meat altogether: it may be allowed in moderate quantities without harm to patient. A diet containing a very limited quantity of salts is of decided value in this disease. Stomach upsets and sluggish bowels very frequently bring on attacks."

One of the best attended meetings was that of the section on dietotherapy under the chairmanship of Rena Eckman, University of Michigan Hospital, Ann Arbor, Mich.

Dr. Amy Daniels, Iowa State Child Welfare Association, University of Iowa, in her talk on "The Dietary Needs of Children," emphasized the importance of training in children's dietetics. Children have strange preferences and these must be corrected to better future generations.

#### Prevention of Goitre

Dr. O. P. Kimball, medical department, Cleveland Clinic, Cleveland, Ohio, gave an interesting and valuable discussion on the prevention of simple goitre in which he said in part:

"The practical applications of prevention of simple goitre in man was carried out through the public schools of Akron, Ohio, from 1916 to 1920, by Drs. Marine and Kimball of the school of Experimental Medicine, Western Reserve University. Since 1920, it is being carried on as a public health measure by the school authorities. On account of the extraordinary results obtained in Akron, Ohio, it is being carried out as a public health problem by the schools in six other Ohio industries where girls are employed. Also several school systems of Michigan and Wisconsin are taking it up. Following the work in Akron, Ohio, it was started in the schools of Zurich, Switzerland, and they obtained such results that it has recently been adopted by the goitre commission of Switzerland to be carried out throughout the whole state as a public health measure."

#### Newer Ideas on Diet Management

Newer ideas on the diet management of diabetes and their practical working out in the hospitals were discussed by Dr. R. T. Woodyatt, assistant professor of medicine, University of Chicago. John Street, of the National Canners Association talked on food poisoning.



# Specialty Food Manufacturers Optimistic

## General Belief at Atlantic City Meeting That Business Recovery is Near

### Specialty Officers Re-elected

President—Fred Mason  
First Vice-President—W. W. Frazier, Jr.  
Second Vice-President—James M. Hills  
Third Vice-President—Louis McDavit  
Treasurer—D. O. Everhard  
Secretary—H. F. Thunhorst

### New Directors

F. E. Barbour, R. R. Clark, A. E. Phillips  
and F. F. King

A SPIRIT of optimism prevailed at the convention of the American Specialty Manufacturers' Association held on November 15, 16, 17 and 18, at Atlantic City, N. J. Individual manufacturers interviewed at the meeting reported a marked improvement in their sales and the general opinion was that the food industry has passed through its depression and is well on the way toward business recovery.

This feeling was echoed by President Fred Mason in his opening address, when he said: "We are coming together this year under better auspices and business conditions as a whole than we have had for many years past. All of us, with hardly an exception, have gone through the most trying times, such as, we trust, will never again be experienced."

Mr. Mason said further:

"I think I can say without any hesitation that the relations of your organization with its sister organizations were never on a more solid basis of mutual respect one for the other than they are today. Of course, with the great multitude of interests represented by our organization, composed as it is, of the largest nationally advertised grocery specialties, made up from its varied lines, it is quite natural that at times there would be differences of opinion and problems viewed perhaps from a slightly different standpoint, but through our sectional meetings, each industry has the opportunity of discussing and dealing with its own particular product and consequent problems, and with this parent association, so to speak, as the clearing house of all, we have been able to meet the real big problems of advertising and merchandising in a way that I hope merits the confidence of your members. Your officers, directors and committeemen have tried, I know, as the reports which will follow will show, to carry through to the best of their respective abilities the spirit of the resolutions adopted at our convention last year."

### Specialty Salesmen an Absolute Necessity

In his report as secretary, H. F. Thunhorst said that his office during the past year has done much to acquaint every jobber in the country with the aims and objects of the American Specialty Manufacturers' Association and the value of the association's stamp on a specialty order to them.

"The specialty salesman is an absolute necessity," said Mr. Thunhorst. "His work is of mutual benefit to the jobber and manufacturer. He sells the jobber's customer and his work is subject to the supervision of the jobber. The manufacturer, therefore, is entitled to the jobber's hearty cooperation in this very expensive and important work."

Committee reports formed an important part of the opening session, and one report in particular, that of the standardization committee, of which Louis McDavit, of Colgate & Company, is chairman, will be found of special interest to manufacturers and distributors. This report in part follows:

"During the course of the year the members of this committee have been in close touch with the chairman and a

partial report of four pages was submitted at the meeting of the board of directors held at Chicago last June, showing that each one had taken active steps to bring about some improvement in the matter of regulating containers, a brief summary of which follows:

"CANNED MILK: Mr. B. F. Amos reported having the matter up with the Chairman of the Canned Milk Division and expressed the opinion that certain recommendations would be adopted.

"EXTRACTS: Mr. R. H. Bond reported having some difficulty in interesting members of the Flavoring Extract Manufacturers' Association, as there was a wide diversity of opinion, but reported progress and hope of future action.

"LYE: Mr. S. W. Eckman reported that the lye industry had purged itself of most of the abuses in the way of indiscriminate packing a number of years ago and that there was practically but one size and that packed either 48 or 49.

"BAKING POWDER: Mr. F. D. Bristley sent a very complete analysis of the method of packing baking powder and its application to domestic and foreign trade and stated that the Royal Baking Powder Company would continue to ship sizes in compliance with the request of the Association represented by Mr. John Mehlhop, certain sizes of which he gave a tabulated list (this list being filed with my previous report).

"SOUPS AND CONDIMENTS: Mr. A. C. Monagle reported that the manufacturers of soups and condiments were packing according to the suggestions of the Wholesale Grocers' Committee, meaning John Mehlhop's Association.

"SALT: Mr. R. R. Moore's report indicated that he was working hard but up to that time had accomplished no actual change.

"CEREALS: Mr. J. F. O'Brien reported that all containers used in the Cereal trade were meeting with entire satisfaction.

"MACARONI AND NOODLES: Mr. James T. Williams reported the adoption of three dozen to the case instead of two dozen, and put an article in the Macarino Journal and was to make the matter a subject of discussion at the next convention of the macaroni manufacturers.

"The activities of this Committee since filing the above report are as follows:

"CANNED MILK: A very excellent report from Mr. B. F. Amos enclosing letter from Mr. Walter Page, of Libby, McNeill & Libby, reading as follows:

"Mr. B. F. Amos,

New York City,

Dear Sir:

With further reference to circular letter of the American Specialty Manufacturers' Association, dated March 9, regarding the standardization of containers, wish to advise that I have written all the manufacturers of milk in case goods sizes, operating in the United States, and wish to submit the following for your information.

Out of approximately 75 letters sent out, we received 46 replies:

16 are now packing 8 dozen Baby size to the case

15 are now packing 6 dozen Baby size to the case

5 are now packing 6 and 8 dozen Baby size to the case

10 not packing Baby size milk

Then we sent out another letter to those packing 6 dozen to the case and those packing both 6 and 8 dozen, asking if they would signify their willingness to standardize on the 8 dozen container.

Five of those packing 6 dozen to the case do not wish to make a change; three are willing to change over to the 8 dozen containers; the rest did not answer our last letter.

All in all, would say that approximately 95 per cent of the production of Baby Milk will go out in 8 dozen containers.

If I can be of further service to you in this connection, do not hesitate to call on me.

Yours very truly,

(Signed) WALTER PAGE.

"EXTRACTS: Mr. Bond reports no action was taken at the Annual Convention of Extract Manufacturers but that he had talked with a number of members and expressed the belief that it would be productive of some good.

"At the convention of the National Wholesale Grocers' Association, Mr. John W. Morey was appointed chairman of a committee known as the economy conference committee, which was to include standardization of containers. Mr.



Morey has written two lengthy letters on the subject and has called on me personally, the chief burden of his recommendation being to eliminate such items as small, medium and large, referring of course to the individual packages and not to containers, expressing the opinion that in the scope of the terms small, medium and large are subject to a great deal of abuse and misunderstanding and also suggests that if possible we secure further action on:

"Cereals (naming rolled oats and corn flakes); dried fruits; chocolate and cocoa; coconut; olives; sauces (except chili sauce); pickles; canned goods—such as fish, meats, baked beans.

"He also recommends the adoption of metric system of packing wherever it can be done, instead of dozens."

#### Report on Trade Conditions

On behalf of the trade conditions committee, S. W. Eckman of B. T. Babbitt, Inc., its chairman, reported as follows:

"Up to about a year ago our board of directors adopted a resolution with respect to a change in the method of handling complaints from jobbers against our members. Formerly whenever a complaint was received a specialty order of one of our members was not genuine, we turned the letter over to our member and took no further action. All too often the member did nothing either and the jobbers in very many cases came to the conclusion that our trade mark 'This order guaranteed genuine' meant nothing in a practical way. Some of the jobbers said nothing about it but others wrote us indignant and almost insulting letters which were entirely justified. One of the largest jobbers' associations complained officially of our failure to make good on our guarantee.

"The board of directors ordered the national office to pay all bogus order claims, bearing our stamp, when proven and look to the member for reimbursement.

"The jobbers have appreciated very much our present mode of handling their complaints. Many have said that hereafter the orders of our members will be handled like the orders of their own men."

#### Legislative Matters Reported

Frank E. Barbour, of the Beech-Nut Packing Company, chairman of the legislative committee, called upon the association's counsel, Charles Wesley Dunn to report on legislative matters. Mr. Dunn referred briefly to the Haugen "slack-filled package" bill, saying that this is now the association's chief concern as the bill has been reported by the House committee. Mr. Dunn said that the position of the association is to endorse any measure which will prevent deception in the sale of food products, but that some faults were found with the phraseology of the bill and that amendments had been suggested. The bill is more or less dormant and the legislative committee is simply awaiting further developments. Tax matters are also being looked after, particularly those which threaten to place such a heavy tax on products containing alcohol, such as flavoring extracts, as to practically legislate them out of existence. Mr. Dunn referred to the fact that there are sometimes conflicting interests within the association, citing the so-called "filled milk" bill as an example. Some of the members had urged recommendation of this bill, while others have opposed its passage. The result has been that the association has taken no positive action either for or against it. Mr. Dunn concluded by paying a tribute to R. H. Bond of McCormick & Company, Baltimore, Md., for his active efforts in legislative affairs.

#### Net Gain of Eleven Members

A. C. Monagle of Runkel Brothers, New York, reported on behalf of the publicity committee, and B. F. Amos of Nestle's Food Company, for the membership committee. The association, it was stated, has made a net gain of eleven members since its convention of less than a year ago.

Charles Wesley Dunn gave a vivid recital of the impressions made upon him by the exercises at Washington on Armistice Day upon the occasion of the burial of the unknown soldier. With an earnestness and eloquence that deeply moved his listeners, Mr. Dunn concluded by appealing for greater idealism in business. He referred to the salesmen

out on the road as the "unknown soldiers" of every business organization and called upon every employer to make their lot a happy one. He said that the day of autocracy and economic slavery in business has gone forever and that the men who have helped build up the business successes are entitled to a just share in the profits of such ventures. "If you don't believe that today," he said, "you will be forced to accept it tomorrow." He referred to the splendid example of the Beech-Nut Packing Company, whose factory has been made a place of real sunshine. He said that flowers on every desk and music while the employees work may seem far-fetched to many manufacturers, but that this practical idealism has worked wondrous results in that plant. "We can make our factories a place of happiness or the worst hovel in the land," he said, and concluded with an appeal for more "kindness and heart" in business. "I don't care how much money you have made if you do not make your plants an ideal place to work you have failed," he said.

#### Recommends Group Meetings

H. M. Foster, secretary of the New York State Wholesale Grocers' Association, recommended group meetings of members of the American Specialty Manufacturers' Association with wholesale and retail grocers to heal wounds in business relationship that if left unattended are apt to fester and become serious business problems.

William Smedley of the Pennsylvania Retail Merchants' Association said the manufacturers should assist in the work of educating the retailer. His association, he said, is trying to make better merchants of its members.

John A. Green, former secretary of the National Retail Grocers' Association, now with the American Sugar Refining Company, also spoke.

At the second day's session a number of very interesting and valuable addresses were offered, the speakers being as follows: Huston Thompson, chairman of the Federal Trade Commission; Walter G. Campbell, acting chief of the U. S. Bureau of Chemistry; J. W. Herscher, president National Wholesale Grocers' Association; Edwin R. Kenzel, deputy governor Federal Reserve Bank of New York; F. E. Kamper, president National Retail Grocers' Association; Frank Presbrey, president Frank Presbrey Company, advertising agency, New York; Walter B. Brown, editor New York Commercial, and H. A. N. Daily, former president National Food Brokers' Association. Owing to lack of space in this issue some of these addresses are reserved for publication in the December issue.

#### Cereal Section Discusses Losses

The cereal section held an interesting meeting at which the great loss due to damaged and insect-infested packages, estimated at \$2,000,000 annually, was the principal subject of discussion. It developed that a dangerous practice has grown up, namely the return of insect-infested packages by retailers to their jobbers, with the result that the jobber's stock of good packages is apt also to become infested, causing still greater loss. Another evil pointed out was the holding of old stock both by jobbers and warehouses. Secretary Thunhorst said that care should be taken to mark dates of shipping plainly on each package so that the older goods are moved from jobbers' stocks and warehouses first.

A motion was offered requesting warehouses and jobbers not to take back infested goods but to report such cases to the manufacturers, when complaint has been received from the retailer, so that the manufacturer may deal directly with the retailer and thus avoid possible contamination of other goods.

J. W. Herscher, president National Wholesale Grocers' Association, was in attendance at this meeting and said that the wholesalers would be glad to cooperate with the manufacturers in any movement of this kind. Mr. Herscher said that cereal manufacturers should impress upon the grocers the perishability of cereal products so that goods would not be kept in stock for several years and then returned because of being in poor condition. He also said that much damaged stock resulted from improper piling in warehouses and there should be education also as to proper storing.



# Freedom of Competition Through Reasonable Restraint

## Regulations on Part of Government Essential in Establishing Fair Business Based on Price, Quality, Service and Advantages of Location

By HUSTON THOMPSON\*  
Chairman, Federal Trade Commission

IN the life of a nation it is always true that those who toil with their hands, whether they be farmers or artisans, can construct that nation. They are the foundation builders. On the other hand, those who are the distributors have it preeminently within their keeping to preserve or destroy the nation. They are the builders of the superstructure. So it is that in this hour, when the President has called upon every force in America to help to bring about a world peace by the limitation of armament, that I address those in civil life who hold the balance of power in determining the future peace of the world, so far as our nation is concerned.

Throughout human history trade rivalries have been one of the basic causes of war. Since this is true the admirable move which is being made in Washington by the President and his advisers toward the limitation of armament can be crowned with permanent success if the business interests of the world will realize that disarmament, while an admirable thing in helping the world to shake off its debt and get upon its feet, will remove but one of many causes of war.

At a dinner in Denver recently, an artist startled me by saying that this was the best time in the world's history in which to live, for, said he, "the crust of society has been so broken up that men and ideas can emerge as never before and get a hearing."

One of the ideas that must emerge from the present yeasting is that freedom flourishes in proportion to a reasonable restraint. This will be a difficult lesson for America to learn, with all its resources, its energy and its youth and ambition. Unless America conquers herself, she can not lead the world out of its present turmoil to a new and better state.

### Reasonable Restraint, Vital Question

The question of a reasonable restraint is one that is pounding at the doors of Congress as never before in our history. After all, Congress is the barometer of the impulses of the American people, and if we will stop to study the flotsam and jetsam of proposed legislation that is thrown into its hoppers, we can anticipate to some extent the direction of the American mind.

Let me try to visualize the situation as seen from the conning tower of the Federal Trade Commission. The people who make up the "Let-Us-Alone" group, which seems to occupy the center of the business stage and strives to hold it, are so blinded by the spotlight that they can not see that the great American public which acts as the stage manager is signaling for a new scene. They do not realize what a change has come over the life of the world and particularly of America. They fail to understand that size with all its handicaps has come to vex not only the economic world but is the greatest question up for solution in our domestic governmental life.

### Registering Heartbeats of American Public

The problem of communicating intelligently the processes of our government to its one hundred million people, and the problem of registering the thoughts of one hundred million people in such a way that their legislative and administrative representatives may be informed of their desires and become responsive to them—these, I believe, are the greatest domestic problems in our country today.

Add to this picture, the confusion and speed with which the ordinary events of life have been accelerated by machinery and invention, and if we do not want the great Frankenstein of modern life namely size, to run over us, like a steam roller, we must be prepared to scrap many of our political and economic ideas, for size produces inertia and inertia is the arch foe of democracy.

Visualize, if you will, the ultimate consumer down in the market place. With life completely transformed in the last generation, we have today, approximately 340,000 corporations in this country engaged in industry, commerce and trade. Hundreds of thousands of distributors are shoving their goods in front of the consumer as never before. This consumer's grandparents bought in a market in which the consumer had very little opportunity for selection, but a great opportunity for investigating and examining his selection before it was made. In those days they bought in bulk, and had the opportunity to taste and feel, or inspect the article of purchase.

### The Buyer in the Market Place

The whole picture is now reversed. The lack of information of the present day consumer is such that he stands there wholly confused. From every direction the necessities of life are thrust at him, but the market has become so complicated and goods pass through so many hands in one complex process of distribution that he is unable, in so far as prices are concerned, to analyze or understand the reason for the difference between the cost of the article and the price he is required to pay for it. He is frequently at so great a distance from the place of production that he is unable to obtain information with regard to the cost. His horizon is so limited that the causes of shortage in an article, which generally produces runaway prices, is a closed book to him.

Add to this the fact that at least in the food line, practically everything is wrapped up or enclosed in cartons whose contents he is unable to inspect until he has arrived at his home—and we have some idea of how helpless the householder of today is and how much assistance he must be given by the distributor.

Let us reduce the picture to a concrete case. Imagine a householder in the city of New York, or any other coast city, who, watching his budget with an anxious eye, finds it necessary to purchase his winter's coal with a shrinking pocket book. Now, all that has been told him by wholesalers, distributors, brokers retailers and manufacturers, may be the absolute truth, but when he takes the cost of production at the mine as the Federal Trade Commission found it out and published it shortly after the war, and when he compares it with the prices which he is paying for the coal delivered into his bin at home, or with the price the Government had to pay at that time, this ultimate consumer is more confused than ever and can not understand what has caused the wide spread between the price of coal at the mouth of the mine and the price the ultimate household consumer is obliged to pay.

### Suspicion in Consumer

The shrinking purchasing power of a man's pocketbook plus his inability to understand the situation creates suspicion, and suspicion engenders an irritation which sometimes drives the inarticulate, peaceful ultimate consumer to

\*From an address delivered before thirteenth annual convention American Specialty Manufacturers' Association, Atlantic City, N. J., November 17.



extremes. Gradually this irritation becomes articulate and is evidenced by the initiation of legislation in Congress.

From a daily review of the bills which are passing across my table, the legislative driftwood indicates that three great economic policies are seeking to dominate the American market and the question of selection is so close at hand that we are right up under the guns.

There are many intelligent men in the business world who would like to see the Government license business and who in the same breath are crying out for less government in business. Of course, the licensing of business would mean a restriction on the part of business freedom, for a license could not be issued until an investigation had been made. Moreover, those seeking a license would have to conform to certain rules and regulations and would be subject to revocation of license. Does the business man of America desire such restrictions?

There is still another group who ask: Why stop at half way regulation like licensing which will ultimately lead to complete domination by the Government? Let us breach the chasm at once and accept nationalization as the only way to escape the Scylla of size in government and the Charydis of confusion in business. I imagine that the American business man shrinks at the thought of either one of these groups dominating in the government.

#### **Bringing Business and Public into Closer Accord**

There is, however, a way out of this dilemma, and the solution lies in the hands of the business men of this country. If business would have freedom from government intervention, then it must subject itself to a reasonable requirement. That means that it must do as business men of other governments have done. It must yield up to some governmental authority information as to costs, production and prices, and the government in turn must tabulate and distribute this information, unidentified as to companies, to the general public and the ultimate consumer in such a way that the consumer's present confusion and suspicion will be dissolved, and consumers, producers and distributors will be brought together in better accord.

#### **Nationalization or Reasonable Restraint?**

Legislation to bring about this remedy is evidenced by numerous bills in Congress today. It is meeting a certain opposition and should it be defeated, the indications are that some business interests will have to face the question of nationalization.

I think I can understand why the business interests are hesitant about giving up such information. In a few instances, they are fearful that their business will be revealed to competitors, although since the open price associations have sprung up and spread over this country, that reason, in the case of a given number, is to a great extent eliminated.

The other reason is one expressed in terms of fear that the ultimate consumer will not be willing that the distributor make a reasonable profit. This idea was brought to my attention in conversation with a number of investment bankers who are opposed to legislation which would require the giving information to a public official with regard to securities about to be put on sale. Their explanation was that if, for example, they sold a security at 96 and took two points as their commission, then the security dropped back to 88 and was sold, the one having to sell, when he learned of the size of the commission, would resent the broker's having made such a commission.

#### **Consumers Not Prejudiced Against Distributors**

Such a state of mind leads me to the belief that business men with this viewpoint are so close to their business that perhaps in doubting a competitor they have carried the distrust to the consumer. As a matter of fact, it would be a rare exception that a consumer would object to a reasonable profit on the part of the distributor for after all many consumers are in the distributing business, and for selfish purposes, if for no other, would not want to deprive any one of a reasonable profit for fear that they in turn might be affected.

This proposal that those controlling the essential necessities of life such as lumber, steel, coal, textiles, etc., should

give the Government the information necessary to acquaint the public with conditions so that the public can deal on an equal basis with those in the industry, meets in part with the opposition of some of the open-price associations. We should distinguish, of course, between the association which is created for the purpose of advancing the better interests of an industry and for bringing the members of the industry into social touch with each other, and the open-price association which may be created for the purpose of exchanging information regarding prices and production with the intent to control prices. This latter type of organization will insist that it already collects the information such as the Government would desire in order to inform the consumer. So far as I am aware, no one of these associations has the machinery nor the money with which they could distribute the information to the public at large, if the information were correct.

#### **External Industrial Facts Little Known**

Moreover, it is a rare thing that an industry actually knows facts which affect that industry that are external to it, and that should be known by the consumer in order that he may have an intelligent understanding of the market. For example, last year when the question of the effect of the importation of wheat from Canada was agitating the farmers of this country, the Federal Trade Commission sought the best authorities in the trade as to the amount of wheat being imported each month from Canada, and the best approximate figure that could be obtained was about 2,500,000 bushels. The commission requested the assistance of the Treasury Department, and within 24 hours had answers from all the custom houses on the Canadian border showing an importation running from 8 to 10 million bushels a month. This information was immediately given out and though the amount was greater than farmers or grain merchants has suspected, confidence in the accuracy of the information had an immediate and quieting effect.

Moreover, the associations referred to do not give a detailed explanation of the reasons for the spread between the producer and the ultimate consumer. The general reason for this is that the retailer is frequently separated from the wholesaler or the broker. So it is that size and intricacy of business has come face to face with size in population and the only alternative to licensing or nationalization is information.

Let us suppose then that a Government laboratory is set up for the collection, analysis and distribution of information as to cost, production and price concerning the essential necessities of life, through its wireless system, its post-office and other official machinery and the press to the ultimate consumer.

What will be the state of mind of the ultimate consumer? You may rest assured that he will be perfectly satisfied with the benefits of open competition. I say this with assurance because from the beginning of that time in which markets first existed, the consumer has been satisfied with the benefits of free competition. But, you ask, what is open, or free competition?

My reply is that it is the opposite of unfair competition and if I were to criticize the Federal Trade Commission Act, I would say that it ought to have defined what was fair competition and stated that all competition which did not come within that definition was unfair.

For example, the consumer will be perfectly satisfied if he is getting the benefits of competition based on the price, quality of the article, service and, in most instances, also the advantage of location.

#### **Truth Makes Free**

Again, such information as I have described would inform every individual in the industry as to the situation so that he could avoid the pyramiding stages in overproduction leading to a collapsing market. He could make his output less seasonal, acting independent of his competitor and not in combination regarding the question of production. By using his own judgment with reliable information before him he could reap the benefits of that judgment, as against the



careless competitor. Above all, it would eliminate much of the unrest which is abroad in this country.

Let us go a step farther. If the American business world were to say to the other nations, "We propose to do business only along the lines of fair competition based on price, quality and service and the advantages of location," and invite the rest of the world to adopt this business platform, I firmly believe this great step would eliminate to a great extent the dangerous causes of war.

Just as the business of the world has become international, has left national shores and circles the globe so the consumers of the world are beginning to call to each other through their governments. If you doubt this, skim the information from the clipping bureaus of the press of the world and study the legislation which is before the many parliaments.

Already, there are organizations created and functioning in many countries similar to the Federal Trade Commission. Many other countries are considering legislation to create such bodies. These bodies are not being brought into existence by chance. They are in response to the demands of the consumer and the better business interests.

Selling below sample misbranding, false advertising, defrauding of all sorts, are seized upon by the competitors of other countries and are the cause for agitating and holding us up to criticism through the foreign press. Moreover the business interests of other countries are suffering from the same situation and are crying out to their governments in

protest and asking for protection against their fly-by-night organizations.

According to the London Times Trade Supplement, at the recent annual banquet of the British Chamber of Commerce, Mr. Baldwin, the President of the Board of Trade, which as you know is a semi-official body in Great Britain, was greeted with tremendous applause when he said in substance that British merchants intended to hold up their untarnished names by suppressing those who injured it by their practices.

#### International Trade Body

All signs indicate that we shall have to come together in some sort of an international trade commission to establish fair competition and eliminate unfair competition, just as has already been done with regard to the international protection of patent rights.

Today the Federal Trade Commission asks the Specialty Manufacturers' Association and other organizations of a similar character to uphold the leadership of the United States in making dominant the rule of fair competition throughout the world and thereby aiding in establishing comity and peace among the nations of the earth.

As Joshua of old upheld the arms of Moses when pleading for his people, bringing victory to Israel's standard, so the business men of today, by lending their support to the President of our land can speed on the noble cause for which millions of hearts are yearning at this moment—peace on earth, good will toward men.

## "Service"—Keyword to Business of Manufacturer and Advertiser

### Both Play More than Role of Self-Interest in Great Drama of Social Progress

By FRANK PRESBREY\*

President, The Frank Presbrey Company, New York City

ONE day in London, years ago, a rather emotional lady came up to Whistler, the painter, and said, "Mr.

Whistler, I only know of two painters in the world—yourself and Velasquez."

"Madam," replied Whistler, "why drag in Velasquez?"

Perhaps when I say that I consider manufacturing and advertising the two most vital forces at work in the world today, you will be tempted to paraphrase Whistler and say, "Why drag in advertising?"

At any rate, I have thought it might prove interesting to discover, if possible, the most basic contributions of these two great branches of business to the welfare of our country.

We attending the convention are successful manufacturers and successful salesmen. In other words, we are money makers. That would seem to fulfill the traditional American ideal.

But I am wondering whether we aren't a great deal more than that? Are we rendering a service that can boast of more than transient value, that is comparable, in any way, with the learned professions and the activities of public men?

Personally, I am convinced that we are. Indeed, it is my firm belief that the industries represented at this convention form a part of the greatest progressive movement in the history of civilization.

#### Mechanical Basis of Life

Civilization, culture, the fine art of living, can never rise higher than the mechanics of existence. A stream cannot rise above the level of its source. Culture itself has been described as the art of making the most of the refinements of life.

And the modern manufacturer—the wholesale maker of physical necessities, conveniences and luxuries—is playing a part in the social progress of man only a little removed from the work of the greatest financiers and publicists.

Man is a trinity—a soul, a mind and a body.

The industrial world, if you will, is mainly concerned with the least of these—his body. But it is a fact recognized as far back as Plato that the welfare of soul, mind and body are so fused and mingled together, so interdependent and sympathetic with each other, that you harm all when you harm one, and you benefit all when you benefit one. Indeed, it would be interesting to know how many gods have been blasphemed, how many moral vagaries of all sorts have been committed because of a general lack of the many things being made by members of this association that enrich and sweeten the business of living.

#### Manufacturer and Democracy

There are those who believe that the manufacturer, by freeing man from the privations and endless drudgery that kept him ignorant and humble for so many centuries, has been the chief factor in promoting democracy itself.

"Where lies the man," asks Brisbane, "that first fastened a sharp flint to the end of a pole, and from an everhanging branch pierced the brain of a tiger? He established man's ascendancy on this planet." He was the first manufacturer.

Today the humblest laborer enjoys a hundred material advantages unknown to a Roman Emperor. These have not given him the brain of a Caesar. But they have done much to exalt him infinitely above the shabby and childlike rustics who made up the bulk of Caesar's empire.

Let the star-eyed idealists decry the philosophy of Economic Determinism. The fact remains that civilization, after all, is to no indifferent extent, a matter of bathrooms and

\*From address delivered before thirteenth annual convention of American Specialty Manufacturers' Association, Atlantic City, N. J., November 18.



electric lights, heat and power, motor cars, table delicacies, breakfast food, tooth paste, mowing and sewing machines, disinfectants and convenient kitchens, pure food and telephones.

And these multitudinous physical refinements exert as persistent and benevolent an influence on civilization, as (in their separate spheres) do the books and paintings and music and temples of the world.

#### Who Is Doing Most?

Indeed, it would tax an astute and audacious logician to prove who is doing the most just now to raise our standards of living, and to enhance the dignity and value of life—the philosopher, the artist, the manufacturer or the advertising man.

Take, for example, a branded ham—one of the most prosaic and mundane packets the markets could offer. If you find it difficult to imagine an alliance between that ham and culture, I suggest that you pause long enough to visualize your primeval ancestor, squatting on the floor of his cave and sinking his greedy fangs into the uncooked shank of a dinosaur!

And in its own degree, a like tendency for refinement and enjoyment of living could be discovered in practically every valid product on the market today.

Every specialty, every manufacture that enhances the delicacy and hygiene of the breakfast or dinner table is reflected in the manners and health of the people. Everything that makes simpler or pleasanter the mechanical routine of living frees and stimulates the higher faculties for better endeavor. Everything that beautifies the environment, elevates, through suggestion, the beholder.

In other words, it all comes down to this: Are we contributing to make life a pleasanter, and a nobler experience? To those who can answer "yes," the profits both in money and personal satisfaction are pretty apt to take care of themselves. And it seems to me that no body of men in history has accomplished more in this regard than the present generation of Americans represented in the Specialty Manufacturers' Association.

I am willing to grant that freely and without reservation because it allows me to add a comment on my own profession that is equally flattering and equally true: Advertising together with transportation has made the modern manufacturer possible, and to that extent the advertising man feels that he can claim no inconsiderable share in the honors.

Advertising has performed a wonderful service in this first thirty years of its maturity. Indeed, one is rather struck with how typically American its career has been.

Coming up from the circus lots and patent medicine fields, a rather awkward, unethical, loud-talking youth, in ill-fitting clothes, it had little enough, at first, beyond boundless energy to recommend it, and its reception among business men was a cool one.

Convinced, however, of its own destiny, quick and eager to learn, it soon began to absorb the manners along with the knowledge of business.

The yokel swagger gradually disappeared. Associating with business men, it began to realize that success was not to be achieved through wit and bombast alone.

#### Growth of Advertising in Popularity

Gradually it got down to work and began to study. First came media and rates and type and copy and artwork. Then one fine day it awoke to the realization that industry was beginning to look to it for real help in selling its goods. It saw its responsibility and opportunity at one and the same time. New studies had to be taken up, new courses added. It plunged into the study of markets, and all the intricacies of research and distribution. It went to school in the nation's factories and studied the products it was asked to sell. Realizing that sales are made in the mind, it went into the psychological laboratory and studied the minds of men. It also went into their homes and studied their habits of living. Finally, as its position in the commercial world became firmly established it began to realize how vital to its equipment was an intimate knowledge of economics, banking and the broader aspects of finance.

Nor could the liberal arts be neglected during this period

of growth. A knowledge of history, literature, sociology and all the intellectual movements of mankind could not be neglected. Advertising had always to keep in mind that it was concerned with art as closely as it was concerned with science and business.

And that I believe to be a fairly accurate sketch in parable of the history behind the first order of advertising agencies today.

They have matured, through a stern evolution, into efficient, hard-headed organizations, balanced by an assembly of specialized talent, and made singularly effective through a diversity of merchandising experience.

I don't imply that the evolution is complete. Evolution is never complete. I only mean that I have no hesitation today, when somebody asks me what I am, in answering that I am an advertising man. And I can't say that I felt the same way about it twenty-five years ago.

#### Advertising and Progressive Living

Advertising has become the great teacher of progressive living. It breaks old bad habits. It creates new good habits. It keeps the public abreast of inventions and improvements. It is an essential guide to buyers in our complex modern markets. It has successfully undertaken the Herculean task of teaching our wives the economy of wise buying. It has taught people to want better food, better clothes, better homes, better everything.

In its highest functioning, it has gone still further and interested the masses in hygiene, sanitation, education, arts, religion, charity and the national welfare and necessities in time of war.

The ethical evolution of advertising has been equally marked. Years ago it thought only of its own welfare. Later on this short-sightedness gave way and it began to think primarily of the welfare of its clients. Today, fortunately for all concerned, its ethics have crystallized into a finer, as well as a more politic principle. It realizes at last it must serve the consumer, and that its tremendous power, and the slowly acquired prestige on which that power rests, can only be retained so long as it holds sacred its moral obligation to the man in the street. "Truth in advertising" has made a profession out of what, for so long, was little more than a make-shift and questionable occupation.

I have deliberately avoided a more specific consideration of technical sales problems in this little talk. Perhaps I have erred. However, I can't help but feel that it is a very practical thing indeed to take occasional cognizance of the broader aspects of our routine affairs. There's a certain tangible value in the thought that we are playing something more than a part of sordid self-interest in this great drama.

"Service," said Gladstone, "is the most practical word in the English language."

#### Milk and Its Uses in The Home

A bulletin has been prepared by the States Relation Service of the Department of Agriculture, discussing the importance of milk as a food and showing its indispensability in the diet of children.

Appearing in large type on the cover page of this pamphlet, which is No. 1207 of the farmers' bulletins, against a background representing a quart bottle of milk, are the words: protein, fat and sugar, minerals, and vitamins. In this way the essentials of diet are emphasized, and the truth about milk told in a few words.

The discussion of vitamins in this bulletin marks the complete acceptance of these discoveries by the States Relations Service. Referring to the vitamin A, found especially in milk fat, the bulletin says:

"Vitamin A is of special importance for two reasons: one is that **without it children cannot grow and develop normally**, even though their food is otherwise sufficient for their needs; the second is that vitamin A is found in such foods as milk, egg yolk, green leaf vegetables, fats surrounding the vital organs, organs of animals, to a less extent in meat, and perhaps in certain fruits and **in few so abundant as in milk**. It appears to go with the milk fat and so is found in whole milk, cream and butter."



# FOOD CONTROL MATTERS

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## Internal Revenue Bureau to Prepare New Regulations for Margarin

**S**TRICT compliance with the oleomargarin law of 1902 will be required by the Internal Revenue Bureau under new regulations which are now in course of preparation and which will be issued in December or early in January.

Based upon that law and upon the recent opinion of the Attorney General as to adulterated butter, the new regulations, it is predicted, will contain several clauses which will affect the margarin industry.

Probably the most severe blow to the industry will be the prohibition of the use of the word "butter" in any connection with oleomargarin, nut butter, or any other similar product. It is understood now that **the new regulations will prohibit** the use of the word not only in the name of the product, which would severely affect the nut butter producers, but in the advertising thereof and on containers, etc.

### New Regulation on Nut Butter

The oleomargarin law defines butter as "the food product usually known as butter, and which is made exclusively from milk or cream, or both, with or without common salt, and with or without additional coloring matter." Manufacturers of margarin have been forced to comply with the provisions of the law prohibiting the use of the word butter in connection with their product, but it is held that a practise has developed of using the word in connection with the product commonly known as nut butter and which it is intended in

the new regulations to bring definitely within the scope of the act.

Another change which it is proposed to make is to restrict manufacturers and others to the use of light cartons, if they are to be used at all, and to prohibit the use of heavy cartons as containers. Originally margarin was required to be packed in tubs, but under a later decision of the Treasury Department the use of paraffin wrappers or cartons in which the product could be sold at retail was permitted. It is alleged that abuses have crept into the use of such cartons and that their weight has been increased in some instances to a point where the contents would stand shipment through the mails or otherwise. It is the intention of the bureau to require manufacturers to adhere to the regulations in this respect.

The bureau now has under consideration the prohibition of such cartons, a measure which would necessitate a return to the old method of tub packing, from which the retailer would be required to weight out the product.

Revision of the oleomargarin regulations has been in contemplation for a long time but has been held up awaiting the settlement of the dispute as to what constituted adulterated butter which was finally settled by the Attorney General's opinion last August. The work of revising the regulations has now been undertaken but the new regulations will probably not be issued before the end of the year.

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## "Butter" Permitted in Titles of Margarin Concerns

**T**HE use of the word "butter" in the titles of Pennsylvania margarin firms will be permitted, according to an official statement recently made by George Ross Hull, deputy attorney general of that state. The continued use of these names of firms, he says in a letter under date of October 5 to James Foust, director of the Bureau of Foods, in such a manner as to indicate only the name of the manufacturers and not to advertise the nature of the products sold, would be allowed and would not conflict with the provisions of the 1921 law prohibiting the use of the word "butter" in margarin advertisements.

"Act No. 220 of the General Assembly of 1921," the communication reads, "forbids the use of the word 'butter' in advertisements of oleomargarin or butterine or upon the wrappers or cartons in which it is sold. It appears that there are a number of companies which have been engaged in business for years, some of which deal in butter as well as oleomargarin, whose business names include the word 'butter,' as for example, B. S. Pearsall Butter Company, Sweet-Nut Butter Company, Rock Island Butter Company, etc.

"You inquire whether these several companies may continue to use their names in advertisement of their goods and upon the wrappers or cartons in which it is sold.

### "Butter" Only as Part of Title Allowed

"In my opinion, the continued use of these names in such manner as to indicate only the name of the manufacturer or dealer and not to advertise or describe the nature of the product sold, is not a violation of the law. The word 'butter,' the use of which is forbidden by the act, is the common noun 'butter.' The prohibition against its use is intended to prevent manufacturers and dealers from using

this common noun in description of, or in connection with, the oleomargarin advertised and sold, and thereby misrepresenting oleomargarin as butter.

"To require these companies to change their names, or to omit their names from advertising matter, wrappers and cartons, would impose an undue hardship upon them, and one which is not imposed by any reasonable interpretation of the legislative intent expressed in the act."

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## Annual Pennsylvania Campaign Against Food Law Violators

The annual fall campaign against food law violators in Pennsylvania resulted in 149 prosecutions being entered by agents of the Bureau of Foods, Pennsylvania Department of Agriculture, during October. This is the largest number of prosecutions entered in one month during the present year.

The largest single class of offenders was made up of dealers selling eggs as fresh which were not fresh. Fifty-three such prosecutions were ordered during the month, the offenders being found in Allegheny, Beaver, Butler, Cambria, Lawrence, Lackawanna, Luzerne, Philadelphia, Schuylkill, Venango, Warren, Washington and Westmoreland counties.

Prosecutions were ordered against 24 dealers who sold soft drinks that were adulterated or contained saccharin while nineteen arrests were ordered when sulphur dioxide was found in various food samples tested.

Thirty-eight milk and cream dealers were prosecuted for selling milk or cream low in butter fat and solids contents.



# EDITORIAL

## Now the Time to Get Technical Men

TO be sure, these are times of retrenchment and not of expression, and firms in general are not adding to their technical staffs. But possibly, there is another way of looking at the so-called unemployed group in this country. That group comprises unskilled labor in greater part, but there are many highly trained men, professionally trained men, who are in the market for jobs. For example, at the recent meeting of the American Chemical Society in New York the number of chemists temporarily out of employment was very noticeable.

The chemical industries in general have ceased operations because of the failure of Congress to date to establish an adequate protective tariff. We are confident, however, that these industries will in time get a new lease of life and assume an important place in American business. Meanwhile, isn't this a chance for the other industries to pick up some good men? Here are hundreds of well trained chemists, many of them with doctors degrees along special lines, many of them with considerable experience in related fields, such as bacteriology and physiology, and all of them with the basic instruction and training in chemistry that is the necessary groundwork for specialization in any field. These are the men that should go into the research and control laboratories. Those firms that have contemplated at some time or other building up a laboratory staff might well consider the present opportunity. There is no doubt a better pick of material now than there will be again for some time.

If there is any possibility of inaugurating a research or control department, unquestionably now is the time to select some men. They can be secured at lower costs than they can be later; they can be broken into new surroundings more easily during periods of slackened activity; and they will then be ready to grow in effectiveness as the volume of business grows.

As for the food industries especially, we would emphasize again what was said a while back in these columns: it is the biochemist who is most to be thanked for the development of food manufacture in the past; it is the biochemist who is steadily plugging along with improvements at present; and it is the biochemist who will determine the direction of progress in the future.

Briefly, then, what we would say is, get a chemist. Get him now. He has learned to judge things by their composition; and since that is the substance of any business, the chemist is an asset to any business.

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## A New Department

IN another page of this issue of The American Food Journal there is an account of a new department just established that will provide a new type of connecting link between the manufacturer and consumer. Briefly stated, the purpose of the bureau will be to translate the nutrition values of food products into commercial values through the medium of investigations, publicity and consumer education.

It is a familiar fact in scientific and dietetic circles that there are many foods whose nutritional aspects are little realized by manufacturers and whose commercial possibilities are to just that extent neglected or at least not utilized to full advantage. Yet no advertising campaign, regardless of the amount of money expended upon it, can be expected to bring its best results unless fortified and strengthened by scientific knowledge of the nutritional possibilities of the product.

The Food Service Bureau of The American Food Journal will step in at the very point where scientific knowledge regarding food products is lacking. Moreover, many new foods just put upon the market will require just the type of investigation this new department is prepared to give its clients. Advertising agencies desire to know where legitimate expectations on behalf of a product may lead and where they may stop. No organization in the country will be better equipped to render this kind of service than the Food Service Bureau.

In no sense, however, is the work of this new department to be confused with that of the advertising departments or advertising agencies. The American Food Journal offers to manufacturers and other interested parties, only scientific co-operation where that is at present lacking, a service that will merely **supplement** efforts looking into the nutritional value of foods and the best possible methods for getting this information to the public. It is a service that will in no way interfere with the work of any other organization or institution. It is a new idea—and a much-needed one.

Typical of the methods contemplated by the bureau will be the establishment of nutritional centers at judiciously selected locations. Small offices will be set in these centers and workers placed in charge. According to the present plans of The American Food Journal, workers will be trained nurses, so far as is possible, so that if those who come for dietary advice need medical attention, they may be referred at once to their own physicians. Past experience has shown that it will not be necessary to urge attendance, for as soon as children or adults know that free dietary advice will be given, attendance will grow automatically. Measures carried out in this manner ought to result directly in increased sales for the manufacturer.

In undertaking this new departure, The American Food Journal is confident that it is performing a service not only for the manufacturers of the country but also for the consumer public at large. There is no reason why people should not know all there is to know about the good qualities of the foods they are using—or neglecting to use. Well-considered educational campaigns availing themselves of the unusual scientific resources already assured this new department, will go a great way toward bringing to light and into consumer use many products whose commercial possibilities are not yet fully realized.

We are glad to announce that Winifred Stuart Gibbs, prominent dietitian, nutrition expert and writer, has been appointed director of the bureau and she has already been assured the co-operation of some of the leading scientific institutions of the country.



# FOOD NEWS FROM WASHINGTON



## Tax Bill Provides for Levy on Beverages

### Two Cents Tax per Gallon on Cereal Drinks and Unfermented Fruit Juices, in Senate Measure—Conference Report December 5

**P**ROVIDING for a tax of two cents per gallon upon all cereal beverages containing less than one-half of one per cent of alcohol by volume, and a similar rate upon unfermented fruit juices, in natural or slightly concentrated form, or where sugar is added, upon bottled soft drinks and natural and artificial mineral and table waters selling at more than ten cents per gallon, and carbonated beverages known as soft drinks, other than those specifically mentioned above, the Senate has passed a tax bill, which now goes to conference for adjustment with the House bill. As passed by the Senate, however, the measure is vastly different from the bill adopted by the House on August 20, and it is probable that the conferees from the House will contest many of the changes made by the upper body.

The House bill provided for a tax of four cents per gallon on cereal beverages and of three cents upon still drinks, other than mineral and table waters, no tax being contemplated upon such waters. The present law provides a tax of fifteen per cent on cereal beverages, two cents per gallon on table or mineral waters, and fifteen per cent upon all unfermented soft drinks.

The Senate bill also provides a rate of 7½ cents per gallon on fountain sirups, with the exception of sirups intended to be used in the manufacture of carbonated beverages, bottled, which are taxable at five cents per gallon. The House rate was ten cents per gallon. The Senate also reduced from three cents to two cents per pound the tax proposed on carbonic acid gas.

#### Manufacturers' Tax Defeated

Efforts on the part of Senator Smoot and certain of his colleagues to secure the adoption of a tax on all manufactures were decisively defeated by the Senate but, undismayed by his failure to secure favorable consideration of his plan at the present time, the Senator has announced that he will bring it up again early next session and will press for its passage, together with the adoption of a bill providing a bonus for all former service men. Similar announcement has been made in the House by Representative Fordney, chairman of the ways and means committee, and efforts will be made to secure the adoption of both measures.

The Senate followed the lead of the House in repealing

the excess profits tax, but determined that the maximum surtaxes on income should be 50 per cent, instead of 32 per cent as provided in the House bill, and it will be necessary to reach an agreement on the rate while the bill is in conference. The Senate also adopted higher estate tax rates than were provided by the House, and voted for the retention of the capital stock taxes.

Heads of families will benefit more than single persons from the changes made in the income sections of the bill. In the case of taxpayers having a net income not in excess of \$5,000, the personal exemption will be \$2,500 instead of \$2,000, as at present, and the exemption for dependents is increased from \$200 to \$400. The exemption of \$1,000 for single persons is continued. The tax rate on incomes will be four per cent on the first \$4,000, of net income, and eight per cent on the amount in excess of that sum, while the surtaxes will apply to incomes in excess of \$6,000.

#### Differ on Corporate Taxation

One of the most important differences between the House and Senate bills is in the tax rate to be assessed upon corporation income. The House bill provides for a tax rate of 12½ per cent, but the Senate increased this to 15 per cent. There is considerable feeling on both sides regarding the rate to be imposed upon corporations, and neither the House or Senate rate will be adopted without a stiff fight. While the present law provides for an exemption of \$2,000 for all corporations, the proposed measure permits such an exemption only in the case of domestic corporations with net incomes of \$25,000 or less.

The present tax on telegraph and long-distance telephone messages is retained, but all the transportation taxes—freight, express and parcel post packages, personal transportation and Pullman accommodations—are repealed, effective January 1, next, and provision is made for the refunding of the tax on such portions of mileage books and other tickets as may be unused upon that date. In addition, business men will benefit from the provision which permits traveling salesmen and others to deduct from their income returns all expenses for board and lodging while away from home in the pursuit of a trade or business.

Purchases of automobiles, whether for business or pleas-



ure purposes, as well as of tires, tubes, parts and accessories, will continue to bear a tax, efforts on the part of a number of Senators to have the tax on trucks eliminated having been unsuccessful. Automobile trucks will be taxable at three per cent but passenger automobiles, motorcycles and tires, tubes, parts and accessories will bear a rate of five per cent.

#### Will Come Up in Regular Session

With the House and Senate bills before it, the conference committee, composed of five members each from the House and Senate, is called upon to produce a third bill, representing an agreement on all sections not identical in the bills as passed, which will be submitted to both Houses for approval. Probably more than a month will elapse before the conferees

finish their labors, and their report will be postponed until after the beginning of the regular session on December 5.

The path of the conferees will be anything but rose-strewn. Members of both Houses have expressed dissatisfaction with certain provisions of the bill and have announced their intention of fighting for changes, both in conference and when the conference bill comes up on the floor for vote. It is probable, therefore, that neither body will adopt the conference bill immediately and, although Senator Penrose, chairman of the finance committee, is very optimistic regarding the early passage of the measure, those who look upon the matter with a more disinterested eye believe that the tax bill will not be ready for the President's signature before the end of December.

## Peanut Growers Need Five Million Dollars

ACCOMPANIED by prominent bankers of Richmond, representatives of the Virginia peanut growers met with officials of the War Finance Corporation late in October to discuss the problem of financing the carry-over of this year's crop until it could be marketed in an orderly manner.

The situation in the peanut industry is serious, members of the War Finance Corporation were told, and considerably more than five million dollars will be required to finance the carrying of the stocks now on hand. Under regulations governing the making of loans by banks, they are unable to loan more than ten per cent of their capital and surplus to any one borrower and this, it was declared, made it impossible for the peanut growers to secure adequate assistance from the banks. Under certain conditions it is possible for the size of loans to be increased to fifty per cent, but even this, it was stated, would not do.

The peanut growers came to Washington for the purpose of learning whether the War Finance Corporation, under the legislation recently enacted authorizing advances on agricultural products, could not afford some assistance. The growers' representatives presented a strong case, and were backed up in their appeal by the Richmond bankers, but it developed that the corporation could not make an advance

unless certain steps were taken to bring the peanut growers' exchange into conformity with the class of organization to which advances can be made under this law.

No formal application was filed by the growers at the time of the conference, and they were advised by officials of the corporation to return to their homes and endeavor to secure the necessary financial assistance through their own banks, which then could make application to the War Finance Corporation.

The usual method for making these advances is through banks, which then can pass the money on to the growers, the banks handling the details of the individual loans and dealing with the corporation only so far as the total advance is concerned. It is stated at the offices of the War Finance Corporation that the growers will probably take the matter up with their banks and, through them, with the corporation.

The War Finance Corporation is willing to do anything it can to assist the peanut growers to handle their stocks and, if all requirements are complied with, will make advances in such sums as may be necessary and in accordance with the value of the stocks offered as collateral. The loans in such cases are usually based on warehouse receipts.

## Hearings on Stockyard Regulations

HEARINGS on tentative regulations governing stockyard owners, commission men and other marketing agencies operating at the stockyards, whose transactions, coming with the provisions of the Packers and Stockyards Act, are soon to be under the supervision of the Department of Agriculture, have been held this month on the following dates: Portland, Oregon, November 7; Denver, Colo., November 12; Fort Worth, Texas, November 14; Kansas City, Mo., November 15, and Chicago, November 18. Chester Morrill, assistant to the Secretary, presided.

The regulations provide for the method of registration by market agencies and dealers, and for their filing with the department the schedule of rates and charges covering the services they perform. The rules provide that each stockyard owner and registrant shall furnish the department whatever information may be required, at the time of registering and from time to time thereafter, with respect to his business dealings; and that the department's agents may at any time during ordinary business hours inspect any and all property in the registrant's or owner's possession. Copies of all contracts between stockyard owners and packing, rendering, serum, fertilizer and other establishments relating to the handling of livestock also shall be furnished to the department.

Provision is made for keeping an accurate record of numbers of receipts sales, shipments and local disposition of each class of livestock; for the observance of secrecy on the part of the department's agents with respect to disclosures made to the department by registrants; and for keeping intact all records relating to the conduct of a registrant's business, the destruction of such papers being expressly forbidden ex-

cept with the consent of the Packers and Stockyards Administration.

A stockyard owner or registrant would be prohibited under the regulations from circulating any false or misleading report tending to affect the price of any livestock.

### Decrease in U. S. Margarin Production

The amount of margarin manufactured this year in the United States shows a decided decrease as compared to last year's figures. From a total of 26,440,491 pounds in August, 1920, the production has fallen to 16,954,571 pounds. Total figures as reported by the Institute of Margarin Manufacturers, Washington, D. C., are as follows:

UNCOLORED MARGARIN		
	August, 1920 Pounds	August, 1921 Pounds
Exclusively animal .....	4,167	
Exclusively vegetable .....	13,153,856	6,907,188
Animal and vegetable .....	12,267,507	9,442,229
COLORED MARGARIN		
Exclusively animal .....		
Exclusively vegetable .....	312,651	86,599
Animal and vegetable .....	702,310	518,555
Total .....	26,440,491	16,954,571

Exports of margarin from the United States to other countries were as follows:

Countries	August, 1921 Pounds
Canada .....	90,280
Panama .....	15,610
Mexico .....	3,550
Jamaica .....	8,100
Virgin Islands .....	3,225
Haiti .....	1,100
Dominican Republic .....	2,000
Total exportation to all countries .....	153,875



# Newest Findings on Preparation of Coffee for Table Use

## Massachusetts Institute of Technology Still Working on Temperature, Metals and Time Considerations in Brewing—American Food Journal Obtains Representative Opinions Methods of Brewing

**T**HERE is undeniably widespread ignorance upon the whole question of coffee preparation for table use, and this lack of knowledge extends, I dare say, to the public schools and among the domestic science teachers as well as the public. It is safe to say that there are few or no authoritative teachings upon the subject on grinding and brewing and that many are founded upon no exact knowledge, but follow mainly traditional recipes and habits, many of them deleterious."

This is the opinion voiced recently by one of the leading coffee roasters of the country and may be taken to reflect accurately the judgment of at least an important group among the manufacturers of this product, which, according to recent estimates, amounts to nine or ten per cent of the entire ordinary food of Americans. Perhaps no other single agency in the country has done more to dispel illusions, misconceptions and misapprehensions with regard to this food in recent years than the Massachusetts Institute of Technology, which through the medium of its department of biology and public health and the co-operation of such scientists as Professor S. C. Prescott, has brought the vital facts concerning coffee to the public. Professor Prescott's paper on his latest investigations in the process of coffee making, read before the eleventh annual convention of the National Coffee Roasters' Association, at its second session, November 2, gave some invaluable pointers to be considered in the preparation of coffee.

### Individual's Choice Important

Whatever methods will be found to be best, emphasized Dr. Prescott, the individual's choice will always be of paramount importance. "Some individuals," he said in the course of his address, "have a keen taste perception, while with others it is not acute. Furthermore, it is likely to be influenced by training habit or experience, so that those who have long been accustomed to a particular style of cooking or a characteristic method of preparation of any food substance unconsciously tend to select the flavor to which they have been habituated as the most desirable. We have, therefore, in these practical studies on coffee-making attempted in every case to test our individual opinions as to quality by checking them against a group opinion, or rather by making them units in such a composite group.

"Observations previously made in the Institute of Technology," continued Dr. Prescott, "have indicated that the factors of temperature, quantity of coffee used, fineness of grind, character of the coffee pot and time of infusing would be most important, and we have therefore carried out many comparative experiments in which one factor alone was varied, all the others remaining constant. By this means, direct comparisons are obtained, and conclusions reached absolutely free of individual bias. Some of these conclusions we believe to be of very great importance in the movement for 'perfect coffee.'"

### New Discoveries on Temperature

Notable among the recent investigations have been the studies on temperature employed to prepare the extract and at which the coffee infusion is actually made. "Practically every analysis of coffee conducted in the past," stated Dr. Prescott, "has been made on an infusion prepared with boiling water. Our experience in the laboratory has brought us to the conclusion that a very deep-seated change takes place when ground coffee is heated with water at a temperature approximately boiling water. If medium or finely ground coffee is added to water at the boiling point, a slight lower-

ing of the temperature takes place, amounting probably to 3 or 4 degrees C. or perhaps 6-8 degrees F. At this temperature there is a marked physical change in the appearance and an action which may be perhaps most easily described as simulating effervescence takes place. Vigorous foaming ensues, gas bubbles are formed and pass off and there is every evidence that a chemical change of complex character takes place.

"Just what happens cannot be positively stated, although our studies on the determination of caffeine suggest strongly that the compounds of caffeine which occur in the bean may here be undergoing decomposition. It is possible also that changes in the protein substances of the bean are also brought about. This change seems to occur at a temperature somewhere between 95 and 100 degrees C., or a few degrees below the boiling temperature. If now we make an infusion of coffee at temperatures below this point the chemical action which results is far less vigorous and the resulting coffee infusion retains all the fine flavors and is freer from certain bitter or astringent flavors than that which is made at the higher temperature. This is important in making coffee.

### Consumer Preference in Temperature

"In order to determine whether this effect of temperature produces a marked change in the quality of beverage coffee, we have carried out an extended series of practical tests, using the groups of individuals as our subjects for determining popular opinion. In general, it may be stated that a fairly large percentage of consumers prefer coffee which has not only not been brought to the boiling temperature, but which has been prepared at temperatures considerably below this point. In the majority of cases, the preference is for the coffee made at the lower temperatures, whereas coffee made at boiling temperatures, or coffee which has been actually boiled for a short time, has been looked upon with comparative disfavor. The importance of this to the housewife, the restaurant keeper or hotel is evident.

### Critical Temperature

"Vigorously boiling water has generally been accepted as best. We find that it is desirable to bring the water to boil, then to remove source of heat for a moment or two and then add the coffee. This will bring down the actual temperature of reaction to a point below that at which the severe chemical change takes place. Do not start with water at the temperature desired for reaction.

"If an increased consumption of coffee is desired this can be specially enhanced by making coffee which is more palatable to the average consumer. On the other hand, there is the important physiological aspect of the problem, for it may conceivably be that the complex changes brought about at or near the boiling temperature decompose certain substances in the bean with the formation or setting free of materials which are not only prejudicial to the taste of the coffee, but may also have a direct physiological effect of undesirable character."

### Time an Important Factor

Professor Prescott stated that studies of the preparation of coffee at temperatures below the boiling point had opened up a new field for investigation and may be still looked upon with skepticism by those who have been accustomed to the ordinary methods of preparation of coffee. The factor of time is also one that will bear future scientific watching. With regard to this consideration, Pro-



Professor Prescott states that the results "have shown that two minutes' treatment at the boiling temperature dissolved something over 80 per cent of the total caffeine, nearly as much is taken out almost instantly, while the long continued treatments yield slightly higher results in soluble, solids, reducing power and caffeine, the figures show conclusively that the desirable constituents are almost instantly extracted. The experiments in this connection were carried out at 100 degrees C., and we now propose to repeat this work, using lower temperatures in order to determine if approximately the same results may be obtained. One of the outstanding results of the whole series of experiments on the time and temperature has been the pronounced deleterious effect upon flavor and aroma in the case of coffee which has been actually boiled even for as short a time as one minute.

#### Effect of Metals on Flavor

"Another matter which seems to be of immensely greater importance than has been ordinarily supposed, is the effect of metals upon the taste or flavor of beverage coffee. The average consumer of coffee in the home is probably accustomed daily to a beverage coffee prepared in a metallic coffee pot of some sort, either tin-plate, aluminum, copper, nickel, or silver-plate. Another large group, but probably not a majority, has undoubtedly been accustomed to coffee prepared in agate ware or some of the vitrified utensils, which are in reality much like glass or porcelain. These we class all together as "glass" utensils. We have conducted a large number of experiments with reference to the effect upon the taste and flavor of these metals and the results have been of a somewhat surprising character in that it is evident when we compare coffee made in glass or some of the vitrified utensils with that made in exactly the same way in contact with metals, there is a pronounced difference in taste. This is particularly pronounced in the case of certain metals and seems to be most marked with tin, tin-plate and copper. There has long been a tradition that silver produces a distinctive taste in coffee, although we have not checked this by experimentation."

#### Filtration Process Favored

Summarizing his conclusions, Professor Prescott stated that on the whole the filtration process yields a clear, good coffee, if made with fresh materials and with the right condition of time, temperature and utensils. "In our experience," he states, "the use of those percolation processes in which the ground coffee is constantly subjected to repeated treatment with the hot water, or coffee infusion, yield much less desirable results and are, in fact, far from satisfactory. Long continued heating processes or those in which the coffee is actually subjected to boiling are even worse in this respect, as they bring into solution bitter or astringent substances and drive out of solution the fine aroma which can only be obtained by retaining the evanescent ethers and volatile oils. There are many factors which need repeated study, but it will be evident from the results described that a good deal of progress has taken place in the study of our problems of proper coffee-making. From the purely scientific standpoint, there remain many things to be determined, and each new departure from the older type of investigation opens up in turn a new field of very great practical as well as theoretical importance."

#### Representative Opinions on Coffee Making

In line with Professor Prescott's findings are arrayed the opinions of leaders of the coffee and related trades, reflected in the answers to a recent letter The American Food Journal had occasion to send to representative men in this field—a steward of one of the leading hotels, a sales manager, an inventor, and four presidents of coffee roasting firms. The answers to this letter, which requested

their judgment as to the best method of coffee preparation—whether the percolator, boiling, steeping, filtration (drip), or tricolator process—revealed an almost unanimous preference for the filtration or tricolator methods.

Preference for the tricolator method is expressed by the Young & Griffin Company, New York City. In a letter signed by E. S. Powell, sales manager of that organization, it is stated that after much experimentation this method was chosen as the one producing the best results. "After carefully testing the various methods," stated Mr. Powell, "I find that the tricolator makes the best coffee in the simplest way. It is acknowledged by the coffee industry that the drip system is the best method and was used originally by the French, but it became objectionable because of the cloth bags. The tricolator method, being also a drip system, using fibre silk paper in place of cloth bags, was quickly accepted. With the tricolator, which drips the coffee only once, you obtain all the good that exists in the coffee, and at the same time have a clearness of liquor and sweetness of flavor that were never obtained by any other method."

#### Hotel Steward for Filter Method

F. Kast, steward of the Hotel Astor, New York City, declared for the filter method, believing that this is not only the simplest method but the best also. "First of all, however, it is essential to have good coffee," said Mr. Kast, giving his entire formula. "Secondly, boiling water must be used, not merely warm water. Thirdly, coffee should be passed through a filter. Our own particular device at this step of the process consists of a muslin cloth. Other institutions prefer to use paper. The only disadvantage of this is that paper can be used only once, whereas a muslin cloth can be used for an entire day. Of course, it should be changed daily in a hotel."

V. H. Engelhard, Jr., president of A. Engelhard & Sons Co., Louisville, Ky., also declared in favor of the drip system. "We suppose," said Mr. Engelhard in a recent letter, "that there are just as many systems for making coffee as there are housekeepers in the country."

"It is our opinion that the proper way to prepare coffee is either to draw it or drip it. Boiling coffee brings out the tannic acid and other injurious parts of the coffee in larger proportion than drawing or dripping. Coffee, when properly made as described, is a very beneficial stimulant but improperly made it can be very injurious."

#### Inventor on His Own Process

A letter from I. D. Richheimer, inventor of the filter paper method called tricolation, showed the advantages of this system. Mr. Richheimer has had all-round experience in the coffee making field, having introduced the "blind" cup testing methods to coffee buyers in the early nineties, collaborated with Sartorio Kato in 1900 in the patenting of fat-free soluble coffee, and invented in 1901 the revolving cylinder coffee dry cooling method. Having personally displaced what he terms the "never-can-be-cleaned" coffee bag with several steamship lines, many hotels and restaurants, he has this to say in favor of the tricolator:

"A filter paper wafer which is impossible to use a second time is certainly more sanitary and allows freer filtration than any cloth filter that was ever used. In a test by the United States Government coffee expert, March, 1917, between tricolation, bag method, percolator and boiling, the report said that 'coffee prepared by tricolation with filter paper, was superior in every way. It had the best body, best color, best flavor and aroma, was particularly smooth in cup, brilliant in color and absolutely clear. The specific gravity was the highest, therefore proving this method the most economical.'



"Chemical analysis made by E. M. Frankel, Ph.D., for the 'Tea and Coffee Trade Journal' to determine relative amounts of caffeine in the brew made by different methods show:

Tricolation (paper filter).....	10.78
Make-right (cloth filter).....	10.95
Silex (vacuum method).....	11.86
Percolator (sieve method).....	13.24
Boiling (not filtered).....	13.92

"Chemical analysis made for 'Good Housekeeping' to determine the ratio of tannin to total solids extracted by different methods show:

Paper filtering, 1:.....	1.72
Cloth filtering, 1:.....	1.85
Percolator method, 1:.....	1.89
Boiling, 5 minutes, 1:.....	1.90

"Are not scientific facts more convincing than theories," adds Mr. Richheimer.

### Educating the People

"I have tried for a long time," writes W. S. Quinby, president of W. S. Quinby, Company, Boston, Mass., "even to the extent of spending money in the newspapers, to educate the people on this subject.

"Starting out some twenty years ago in the coffee and tea business, the writer was imbued with the idea of quality,—of producing a blend that could not be improved upon. But he has found that it is not enough for the importer and roaster to rigidly uphold the standard of his product. The true coffee merchant must go farther and give time and knowledge to helping the restaurant and hotel man to an understanding of the principles of coffee making.

"Speaking from long years of practical experience and our endeavor to cover every condition which arises in the production of a cup of coffee that satisfies the greatest number, I can safely say there is one safe way to get all the caffeine and very little of the tannin. And this, of course—bearing in mind the action of both—is to bring ground coffee in contact with boiling water, and thus extract the caffeine or flavor, but not to leave them in contact long enough for too much tannin to be extracted. And by boiling water I mean water that is actually bubbling at a gallop; that is 212 degrees hot. When water is only steaming it is not boiling. Water will always steam when warmer than the air.

### Pouring or Leaching Process

"In this way has been worked out the principle of pouring boiling water over the coffee, instead of boiling the coffee in the water. The pouring process is what is called filtration, or 'leaching' coffee, and is by far the best of any known way to make it. Pour boiling water through the coffee? Why, that seems simple enough! Why is there being made all this to-do about a small matter like that?

### The Leaching Method

"The standard leaching urn with a close mesh bag is the best one to use. This method by chemical test shows the nearest perfect solution of coffee of any known way. In fact, properly leached coffee is almost tannin-free. Pressure urns and other patented methods have never yet produced results that can equal the ordinary leaching urn. As a rule other devices extract too much tannin instead of the perfect balance of coffee properties. Methods of making coffee advertised to get strength with the use of a small quantity of coffee result in an excess of tannin and lack of flavor. All experience proves that a gallon of water cannot be turned into properly flavored coffee with less than eight ounces of dry coffee. No method can possibly bring out more because it is not there to be had.

"With the standard leaching urn use a fine ground coffee. Some advocate that pulverized coffee, used in large quantities or during rush hours, is inclined to pack and mat and become unmanageable. Moreover extreme fineness is no assurance of the best results. As a matter of fact,

coarse ground coffee gives us the more flavory drinking quality, but requires the use of so much coffee per gallon that it becomes too expensive for practical use."

Edward Aborn, of Arnold & Aborn, New York City, had the following to say in favor of the filtration method:

"The filtration, or drip, method allows the use of coffee in its most efficient brewing state (finely ground, like a fine meal), and water at its highest brewing efficiency, absolutely boiling, 212 degrees F. By this is meant water started at the boiling point but not kept at the boiling temperature in contact with the grounds, thus causing the 'cooking' which is destructive. It also permits a short contact of water and coffee, a vital point in quality and health considerations.

"This method, as shown by all tests and chemical analysis, produces the best and highest value brew. Such objections as can be made to it are due to faults in using it and not to the method itself.

"Therefore, effort should be concentrated upon the correction of such faults and the very simple and easy essentials made known in every home.

"The chemist reports the practical elimination of 'coffee tannin' by this method, the analysis showing a trace only—.29 grains to one cup.

"The filtration method is not new, but well tried, thoroughly proven and long used, though often incorrectly. It is the method followed, more or less correctly, by all of the first-class hotels in the world. It is controlled by no patent or proprietary device, and requires a most inexpensive equipment. For a perfect result it but demands an accurate adherence to simple but vital principles. Deviations from these fundamentals, though apparently slight, cause failure. When they, and the necessary exact following of them, are clearly understood, any person, even a small child, can brew coffee with unvarying success.

### Dimensions of Filter

"A first point to consider in filtration is the dimensions of the filter bag or container of the ground coffee, in relation to the quantity of coffee used and the granulation of same. If the filter be a muslin bag, free on all sides, the filtering surface is considerable and permits the necessary quick passage of water through the grounds, provided the bag is of a wide enough diameter as to prevent too great a depth of grounds through which the water cannot quickly penetrate. The error of too narrow a filter is a common one. It causes a delayed filtration, which means undesirably long contact of water and coffee and also the cooling of the liquid which in a correct, undelayed filtration is smoking hot at completion. The bag should also not be too long or be allowed to hang or soak in the liquid. A filter bag set tightly into a pot against its sides, thus surrounded with impenetrable walls, is greatly reduced in filtering surface, and the filtration is thereby slackened.

### French Drip Pot

"Many users of the filtration method pour the liquid through more than once. This gains some added color, but adds undesirable element, depreciates flavor and is especially inadvisable when the grind is sufficiently fine. One pouring only is recommended for the best results.

"The chinaware, or glazed earthenware pot sometimes called the 'French drip pot,' with a chinaware or earthenware sieve container for the grounds at the top through which the water is poured, being free of all metal, is inviting in purity and in hygienic merit. Together with the filter bag, it is subject to the above remarks on dimensions. A chinaware sieve cannot be made as fine as a metal sieve and cannot of course, hold very fine granulation as can cotton cloth. More coffee for a given strength is, therefore, required. The upper container should be wide enough, for a given quantity of coffee, as to allow an unretarded flow, and the more openings the strainer contains, the better."

M. J. Brandenstein, president of M. J. Brandenstein & Company, said: "We personally make our coffee with the tricolator and have done so for several years. Wish that all of our customers would do likewise."



# Model Industrial Relations in Packing Plant

**H**OW a great packing company endeavors to bring about a closer community of interest between the concern and its employees is shown by the various activities of Swift & Company with respect to their employees. In this organization of more than 60,000 workers, relations between employee and employer are considered more than merely an exchange of labor for a wage.

As an official of the company recently expressed it:

"Loyalty of the employer to the worker cannot be expressed merely in dollars and cents; loyalty of the worker to the employer goes further than the mere exchange of so many hours of labor for his wage."

On September 15, it was announced that Swift & Company, in common with several other large packing houses in Chicago, would put into immediate effect a plan of employee representation similar to that now operating in a number of large corporations. Up to this time, the so-called Alschuler agreement had been in effect since the early part of the war period and had been extended for six months from March 15. This provided that all questions in dispute between the packers and their employees should be settled by arbitration before Federal Judge Alschuler.

## No Discrimination Against Unions

The system now adopted makes no discrimination against members of a union, but the agreement stipulates that only those who are employees of the packing companies may represent the workers in the joint council. The new plan was endorsed by 75,000 employees, comprising 90 per cent of the total force and all questions of wages and working hours will be settled by the councils of workers and managers.

It has been the company's endeavor to make the conditions under which its people work as pleasant, healthful and sanitary as possible. Swift & Company have spent a great deal of attention and money to make their plants safe places in which to work. For many years all plants have been regularly inspected to see that the employee is adequately safeguarded. Accident prevention books in eight languages have been printed and distributed to employees to further this idea.

The medical department of Swift & Company embraces a staff of physicians, surgeons and nurses. The services of this department are at all times at the disposal of employees without charge. At the Chicago plant seven physicians and two nurses are on duty on all working days, and at least one physician is on duty every minute of the year. At all the larger plants adequate and centrally located modern dispensaries are provided.

At Naperville, Ill., the company has erected and maintains a cottage on the grounds of the Edward Sanatorium for the treatment of tuberculosis. Here employees are cared for, without charge to them, until their recovery.

## Meals Provided at Cost

Large service or utility buildings have been completed at the company's plant. In these buildings hot meals are provided at cost; there are shower baths, lockers and other conveniences. Each has a smoking room for men and a rest room for women.

The general office building in Chicago contains similar conveniences, including a fine restaurant and cafeteria with service and appointments second to none. The entire restaurant system is on a non-profit basis. The air breathed by the 2,000 employees in this building is made pure by washing and is cooled in summer and warmed in winter. There are also a club room, a rest room and a library for use of employees.

Most of the office employees are members of the Swift Club, which is located at Forty-first street and Michigan avenue, Chicago. It places within their reach all the social advantages of a large club. This handsome four-story building contains bowling alleys, billiard and pool rooms, shower baths, a gymnasium and a grill room. The auditorium and

ball room has a seating capacity of 800. There is a women's department which gives instruction in domestic science, millinery and Red Cross work.

The club is organized on a strictly democratic basis and the officers are elected by the employees. Classes in commercial law, foreign languages and business methods are conducted. Among the employees' organizations which utilize the building as headquarters are the following: Men's chorus, baseball club, tennis club, golf club, dramatic club.

An employee's benefit association has a membership of more than 33,000. In the 13 years of its existence it has paid out over \$2,000,000 in cases of death and disability. The entire expense of conducting the association is paid by Swift & Company, all the contributions of the members thus being available for actual benefits. Membership in the association is voluntary.

The company maintains a pension plan to which employees are not required to contribute. Under this plan at the present time there are nearly 200 former employees who are receiving pensions. Provision is made for the widows and children of deceased employees of long service, or pensioners.

It is now possible for any employee to purchase stock in Swift & Company at the market price by a payment of 10 per cent down, the balance of the payments being spread over a period of two years. At the present time Swift & Company have more than 40,000 shareholders. More than 21,000 employees either own stock or are buying it on the installment plan.

The shareholders in this packing concern are scattered over the entire face of the globe. One or two are in Africa. Several reside in the Philippines, Hawaii, Japan and Alaska, and every country in Europe is represented.

## World-Wide Distribution of Shareholders

There are also shareholders in every state in the United States. A map of some of the states, spotted with the number of shareholders, would turn black. For instance, Massachusetts has 5,764; Connecticut, 3,287; Maine, 407; New York, 3,364; little Rhode Island, 363; Pennsylvania, 1,462; Maryland, 160; Illinois, 8,684; Missouri, 1,404.

While many persons may think of a packing concern as a one-man or a family affair a recent check-up of the holdings showed that it would take 900 of the largest shareholders to vote 51 per cent of the stock.

For some years the company has maintained a vacation camp at Fish Lake in northern Indiana. Three commodious buildings have been erected for the women employees from office and plant. Office women are permitted to visit the camp for a week-end during the summer, the expense of the trip being assumed by Swift & Company. Those who wish to spend their entire vacation at Fish Lake are charged a nominal sum.

Women employees of the plant who have been in the employ of the firm for a year are given a week's vacation at the camp at the company's expense. In some cases children may accompany their mothers. Tennis, boating and bathing furnish amusement and a full program of rest and recreation is planned. A camp also is maintained at Fort Worth, Texas, buildings have been erected for the women employees from for office and plant employees and their families.

The training division is conducting careful studies, which, it is believed, will result in mutual benefit to the company and the employees. Probably the most important feature of this work is that it gives the employee a chance to express his ambitions, to state the training he desires, and to establish a closer contact with the company.

It is the belief of Swift & Company that the problem of relations with their employees is being worked out with a measure of success. More and more thought and attention are being given to the opportunity and responsibilities presented in a big industry to improve working and living conditions.



# New Possibilities in Dehydrated Banana Product

## Revival of Manufacture of Flour from this Dried Fruit Faces Ready Market

By OSCAR JAMES VOGL

EVERY great war has brought us a new food discovery. Dehydration, while not discovered during the war days, owes its popularity to the short ration period.

Germany and Austria especially had to conserve every ounce of food and so were forced to make use of dehydration in all conceivable forms. It is therefore not to be wondered at, that the great authorities on food dehydration are found within the borders of Germany. Indeed no other country has devoted so much thought and scientific research to this industry, which to-day is of great importance to the fifty million underfed Germans and Austrians, whose food rationing depends much on dehydration.

When accurate information is sought on the subject, the seat of learning is Berlin. In getting the data for this article I was compelled to visit the scientific sanctuary and laboratories of Dr. Herman Luthje of Berlin, who cheerfully and kindly put aside all secretiveness and frankly told me the story of dehydrating bananas.

In all justice to Dr. Luthje I want to state that this young man is considered one of the best informed experts not only on banana dehydration, wherein he specialized before the war in Central America, but on general food conservation through dehydration. He invented a number of devices and discovered new methods to improve the quality and reduce the production cost.

In all modesty he gives much credit to his co-workers and speaks highly of the interest displayed by various concerns from the United States to permanently establish the industry in this country.

A great injustice is always done a new food industry when it is permitted to use questionable raw materials. The canning industry never made such rapid strides until it adopted quality and rigid factory inspection as a permanent policy.

Food dehydration has unfortunately been used as a war relief measure and many food products have been dehydrated which should have been thrown away.

It was conservation of the wrong sort and not until the dehydrating industry is built on a quality foundation, will it become a lasting success.

### Must be Carefully Selected

Bananas being a very delicate fruit, easily spoiled, bruised and contaminated, must therefore be carefully selected for dehydrating purposes. Any sort of banana can be dehydrated of course, just as any apricot, peach, plum, or prune; but if a quality product is desired, only ripe, sound, perfect fruit should be used.

As we all know, it is impossible to get all ripe bananas on a single bunch. It is a peculiarity of this fruit to have various layers of the same bunch ripen at different times.

It therefore is important to watch the ripening process in the bananas while they hang in bunches in large airy storage rooms.

It is also important that this fruit is not bruised and is picked at the right time when ready for the dehydration process. Skill in judging the fruit is necessary. Too ripe or not ripe enough bananas will produce a poor finished product. As the French chefs truthfully say: "Je ne sais quoi." It's the knack of knowing how, that means so much towards producing a palatable product.

Dehydrated bananas found much favor and a ready market in Central Europe under the name of banana figs. In fact, the demand exceeded the supply as long as quality banana figs were produced.

A decline in demand succeeded the prosperity period, but to-day the field is again wide open for the quality maker, whose reward will be in proportion, to the care and effort put forth in the making of dehydrated bananas. In order to get a perfect product selection of the right raw materials is of utmost importance. The small sweet bananas are best suited for the making of fine banana figs. They must be allowed to ripen thoroughly in the storage room until they have turned to a golden yellow color. Then they must be peeled and all fiber removed.

Before the war this peeling was done by hand, but now machines have been invented, making the process very sanitary. These machines also provide for proper dumping of the peelings. The quicker these are removed from the premises the better it is for the finished product. Tropical countries are unfortunately inhabited by large swarms of germ carrying flies. The presence of banana peel-

ings on factory floors attracts these insects and prevents quality production.

Free from skins and fiber the bananas are placed on trays, the trays stacked on tray carts running on rails and passed through tunnel dryers (see illustration) until their water content has been reduced to twenty per cent.

### Physical as Well as Chemical Process

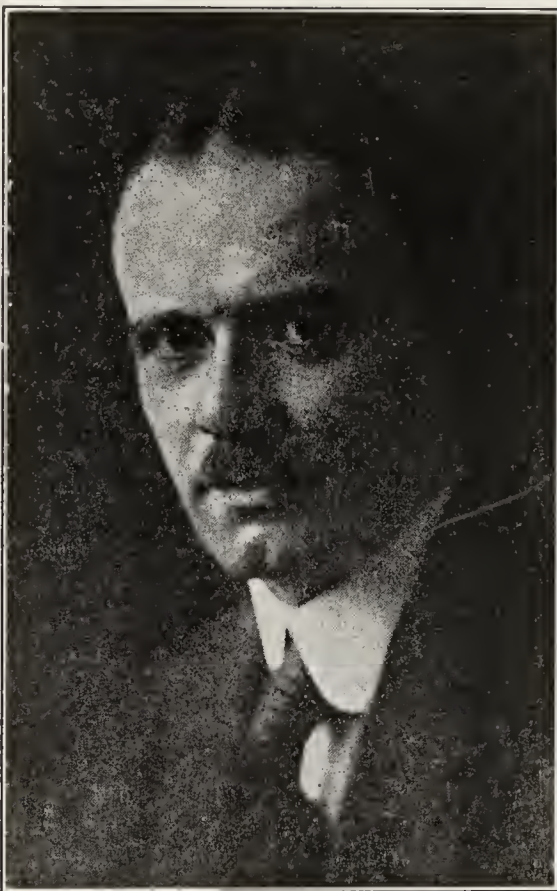
During dehydration the banana goes through a physical as well as a chemical process. The physical process is the drying out of a great part of the water.

The chemical process is the complete conversion of the starch into sugar.

The more care is given these two processes, the better the finished product will be.

The drying in tunnels or separate chambers where temperature and strength of pure hot air stream can be perfectly controlled and regulated is therefore highly essential.

The perfect finished product is of rich golden yellow color



Dr. Herman Luthje  
Pioneer in Dehydrated Banana Products

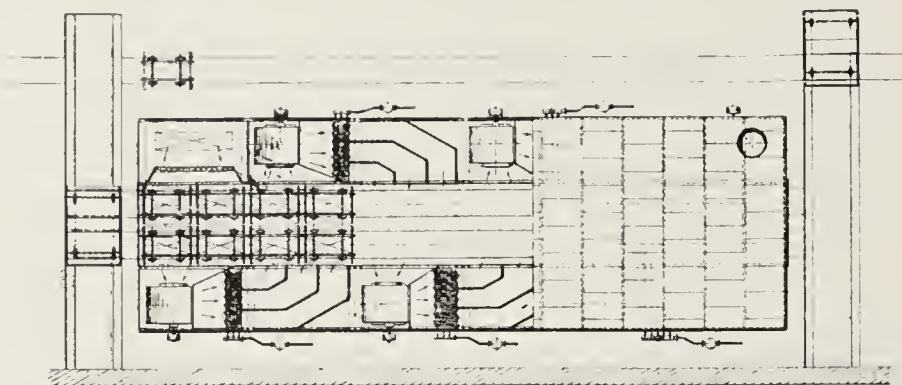


and of sticky fig-like appearance. It is packed in boxes and shipped to market, keeping its fine flavor and color for many months if stored in a well ventilated cool and dry place.

The poorly made banana figs are tough and leathery. If over-ripe or not properly ripened fruit has been used, it can be detected in the flavor which in that case would be sour and sometimes rancid.

#### Banana Chips

For this purpose one uses the large bananas, rich in starch, known as "Machos" since they are not suitable for the manufacture of banana figs on account of their low sugar content.



Cross Section View of Banana Dehydrating Machine

These bananas also have to be ripened, peeled and then cut lengthwise in thin strips. The strips are then placed in trays and allowed to dry in a tunnel dryer until their water content has been reduced to 8 or 10 per cent.

#### Banana Flour

These dry banana chips are quite brittle and are milled into a fine flour. In this form they find a ready market among the biscuit manufacturers, who blend it in right proportions with wheat flour and produce through it, a highly palatable, fine flavored, aromatic baked product. It is also used for the baking of cakes, pies and for confectionery.

#### Important Points in Dehydrating Bananas

The soft and easily damaged nature of bananas makes it important that they be handled as little as possible and are not shaken up or disturbed while going through the drying process.

The peeled bananas or the banana strips are therefore placed on trays a reasonable distance apart. The trays are piled an equal distance from each other, on specially constructed tray carts for this purpose. These carts run on rails into the dryer in order not to shake up the fruit.

All trays are nickel-plated for a slight action of the metal might have its unpleasant influence on the color or flavor of the dehydrated fruit. Inside of the dryer the temperature of the dry air has to be carefully watched.

If the temperature is too high a thin layer will form itself round the fruit and prevent it from becoming thoroughly dehydrated.

The fresh ripe and naturally moist bananas must first be exposed to the damp and rather cooler dry air stream so that they dehydrate gradually and very slowly. This prevents the forming of an outer crust on the fruit and helps produce a quality article.

The further the tray cart advances in the dryer the warmer the air becomes and the more complete is the dehydration until it is finally discharged perfectly prepared. Only in this way is it possible to produce a uniform, rich, golden, yellow-colored dehydrated banana product.

#### High Food Value at Low Cost

All believers in a well-rounded diet recognize in the banana one of the most nourishing fruit products known.

Food authorities, no matter how diversified in opinion on other subjects, agree on the excellent food value of the banana.

The best proof of its value as a flesh-builder can be seen in the presence of the banana on the prescribed menu of the patient entering a weight-gaining diet.

It should not be assumed that over-enthusiastic statements of some faddists on the subject of bananas are absolutely correct, but this much is certain: that owing to its large content of albumen, sugar, starch, and mineral salts, it is entitled to a high position among the nourishing fruit foods.

When applied to dehydrated banana products, this statement may be underscored, for here we have reduced the water content, and providing the right process has been used, all starch has been converted into easily digested sugar, while the albumen and mineral salt content remains the same as in the ripe banana.

In some respects the properly dehydrated banana is to be preferred to the freshly picked fruit.

It is distinctly a product that represents large food value to small quantity. If it takes five bananas to a pound, one pound of banana figs or banana flour represents 15 to 16 fresh bananas.

The food value cost of dehydrated banana products is considerably lower than that of fresh bananas. If for example, bananas were costing the consumer 40 cents per dozen and five bananas represented a pound, this pound banana food value would cost the consumer 16½ cents. Three pounds, representing 15 fresh bananas would cost, therefore 49½ cents. While one pound of dehydrated bananas or banana figs, for example, would only cost the consumer 35 cents, since it takes about 4½ pounds of fresh bananas to make a pound of dehydrated, the dehydrated is four and a half times as nourishing and forty per cent cheaper, besides being more easily digested, since the starch has been converted into sugar.

It is safe to state that it would be hard to find another food product possessing the same nutritive value per pound.

We may truthfully say it is fruit and bread combined.

Let us hope that for the good of humanity and for the sake of better business, banana dehydration on a quality basis will be revived. There should be a ready market for such a product if properly merchandised and advertised.

The food field offers undreamed-of opportunities to the patient pioneer, who will make better food value at lower cost his guiding star.

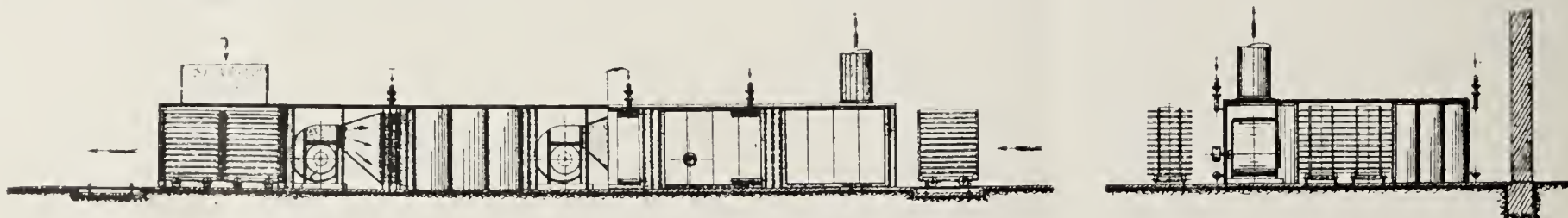
#### Definitions of Citrus Fruit

The following definitions and standards for grapefruit and oranges were adopted by the joint committee on definitions and standards of the Department of Agriculture, March 23, 1921, and were approved by the Association of American Dairy, Food, and Drug Officials, October 7, 1920, and by the Association of Official Agricultural Chemists, August 19, 1921:

Grapefruit pomelo, is the sound, mature fruit of *Citrus grandis* Osbeck. The juice of the mature fruit contains not less than seven (7) parts of soluble solids to each part of acid calculated as citric acid without water of crystallization.

Orange (common sweet, or round) is the sound, mature fruit of *Citrus sinensis* Osbeck. The juice of the mature fruit contains not less than eight (8) parts of soluble solids to each part of acid calculated as citric acid without water of crystallization.

The foregoing definitions and standards are adopted as a guide for the officials of this department in enforcing the Food and Drugs Act.



Side View of Typical Banana Dehydrating Machine Used in Process Perfected by Dr. Luthje



# QUESTIONS AND ANSWERS

## On Problems of Nutrition and Diet for Dietitians and Domestic Science Teachers

Conducted by Bertha N. Baldwin

*A multitude of things go to make up the mental equipment of the successful dietitian and home economics teacher. Chief among these is the latest information which science or business gives about any one of the many aspects of food and feeding. And how many sides exist to food and feeding no one realizes better than the busy dietitian or teacher. To direct successfully the dietary department of an institution, to feed efficiently people in commercial lunch rooms and restaurants, to buy economically food supplies in an ever changing market, to keep the daily classes busy with the schedule of subjects to be covered in the school term—all this demands the entire time so that none is left to devote to keeping up-to-date with scientific and technical progress. And yet former training, excellent though it was, will avail little unless it is supplemented continually by newer knowledge.*

*Questions come up to the dietitian daily: What is the effect of a certain food (oleomargarine, dried milk, etc.) in the general diet? Can a given commercial product be used in diseased conditions? What are the significant points in manufacturing or handling new foods? How are the vital elements in foods—vitamines,*

*for example—influenced by the processes of preparing for the market? What care is exercised to insure purity and wholesomeness? The teacher wants to know the processes of manufacture and handling; the economic situation as regards food; the laws controlling the manufacture and sale. She is interested in obtaining pictures and charts to use as illustrative material.*

*Reference books will not always supply the data wanted since the progress of discovery and research in food and feeding outruns any revision of books. To take and read all the magazines and journals that touch on the subject is obviously impossible from the point of time and money. Information about what is new in the field should be brought to the attention of those interested in food and nutrition. The American Food Journal is prepared to supply the need by acting as a clearing house for current information—answering specific questions and problems that come in from its readers, suggesting items of interest, and indicating literature that will be of special value. Readers are invited to send in questions to be answered in this department.*

### Diets for Gastric Ulcer

**W**HAT are the more recent ideas," writes one of our readers, "about diets in gastric ulcer cases?" In this connection, it may be stated, gastric ulcer is one of the most usual cases needing special diet that comes into the province of the hospital dietitian.

The Lenhartz diet is classic and needs no comment. The Sippy treatment has been in general practice long enough to be used by physicians other than Sippy. Papers are being read before medical societies and are appearing in medical journals discussing the results in this treatment. Some authors have computed the per cent of cures by this treatment to be: 94 per cent in mild cases, 85 per cent in moderately severe cases, 80 per cent in severe cases—averaging 86 per cent in all cases. Statistical reports are only of minor importance but they "indicate in a general way the overwhelming advantages of Sippy."

The basis of this treatment is the neutralization of free hydrochloric acid by means of the diet and alkaline powders, to allow the ulcer to heal itself. The patient remains in bed three or four weeks. There is no preliminary period of starvation nor administration of nutrient enemata. The patient receives three ounces of mixture of equal parts milk and cream every hour from 7 a. m. to 7 p. m. After two or three days, soft eggs and well cooked cereal are gradually added until in ten days he receives three ounces milk and cream mixture every hour three or four soft cooked eggs, and nine to twelve ounces cereal each day (cereal served in portions of three ounces weighed after cooking). Later, cream soups of various kinds, cocoa, vegetable purees and other soft foods may be substituted as desired. The total bulk of each feeding is not over six ounces. After a longer or shorter period according to the condition of the patient, a large variety of soft and palatable good may be used: as jellies, marmalades, custards, creams, etc. But the basis of the diet is always milk and cream, eggs, cereals, vegetable purees and bread and butter. The best cereals are farina, cream of wheat and rice cooked to a pulp. The milk may be flavored, if necessary, with tea and cocoa, and butter balls substituted for cream.

#### Convalescent Period Important

The management of these cases after the patient is up and pursuing his regular occupation is most important. It is best

to continue the hourly feedings. If this is impossible, a light breakfast of 10 to 12 ounces of cereal, eggs, bread and butter or any soft food may be taken. By using a thermos bottle, hourly feedings of milk and cream mixture (three to four ounces each feeding) until noon are possible. A light luncheon of easily digested meats follows. During the afternoon, the morning feedings are continued until the evening meal. If the hourly feedings cannot be maintained, three usual meals can be taken with an increase of the alkaline powders. At the end of 10 or 12 weeks, the intervals between feedings can be increased to two hours, and about twice the amount of food taken each time. At the end of twenty or more weeks, the patient should be having three meals daily with a glass of equal parts milk and cream in the middle of the morning and afternoon. These five daily feedings are best continued four or five months longer. No possible harm can result from this regime even after the ulcer is healed.

#### Carbohydrate Diet

In a recent number of "Medical Life," September, 1921, Dr. Kantor of the Vanderbilt Clinic, Columbia University, outlines his carbohydrate diet for ulcer. Frequently there is a preliminary period of starvation, and feeding is resumed very gradually and sparingly. The diet first consists of liquid carbohydrate preparations as barley water, rice gruel, thin cream of wheat, thin creamed vegetable soups, and arrowroot gruel. Four to six ounces of these warm liquids are given every day. By the second week small amounts of boiled milk, soft egg, rice and even boiled minced chicken may be added. As the amount of food increases the intervals between the feedings lengthen. By the third or fourth week, the addition of soft white bread, minced steak, potatoes, purees, macaroni and weak tea or coffee is permitted. After the fifth week a gradual return to convalescent diet can be made. This consists of:

Breakfast: Boiled milk with cocoa or coffee, any cooked cereal (strained) with cream, dry toast, butter, one egg soft cooked or poached.

10 a. m.: Glass of milk, malted milk or milk with beaten egg.

Lunch: Thick potato, pea or bean soup with toast soaked in it; or boiled rice with milk or cream; two soft cooked, scrambled or poached eggs.



4 p. m.: Bouillon with rice, or chicken broth and dry toast or crackers.

Supper: Minced chicken or rare scraped beef or inside of chop or fish, mashed or well-baked potato, buttered toast, junket or custard or coffee jelly or tapioca pudding.

10 p. m.: As at 10 a. m.

The importance of regular meals, careful chewing and slow eating and drinking, as well as avoiding spices and limiting salt is emphasized.

A new book by C. D. Aaron ("Diseases of the Digestive Organs," Lea & Febiger, 1921) gives the diet as used by the author in Detroit. His diet consists of these foods: soft or hard boiled eggs, milk, bread, milk toast, crackers, strained cereals with cream and sugar, rice, custard, blanc mange, junket plain ice cream, mashed or baked potato with cream or butter. The patient is fed as follows:

8:00 Breakfast of food above.  
9:00 Powder.  
10:00 2 ounces of half milk and cream.  
11:00 1 soft or hard egg.  
12:00 Noon meal of food above.  
1:00 Powder.  
3:00 3 ounces of half milk and cream.  
4:30 Powder.  
6:00 Evening meal of food above.  
7:00 Powder.  
9:30 Glass of half milk and cream, 1 hard egg, white bread and butter.

The dietitian welcomes any diet that offers her a greater

range of foods to serve her patients. The newer diets for gastric ulcer do materially increase the possibilities and more attractive and appetizing menus can be served as a result.

#### DETAILS OF SIPPY DIET

(Southern Medical Journal, May, 1920)

Hourly 7:00 a. m. to 7:00 p. m.—milk and cream 1 1-2 ounces each (3 ounces).  
Days 1-5 Milk and cream.  
6 Add soft egg, cocoa.  
7-8 Add soft 3 eggs, cereal.  
9-10 Add soft 2 eggs, cereal, cocoa, milk toast.  
11-14 Add soft 3 eggs, cereal, cocoa, milk toast, custard.  
15 Add 4 eggs, cereal, cocoa, milk toast.  
16 Add 3 eggs, cereal, cocoa, milk toast, toast, vanilla ice cream.  
17-18 Add 2 eggs, cereal, cocoa, milk toast, minced chicken, ice cream.  
19 Add 1 egg, dry toast, cocoa, milk toast, minced chicken, ice cream.  
20 Add 3 eggs, dry toast, butter, cocoa, broth, minced chicken, spinach.  
21 Add 5-6 eggs, toast, butter, broiled lamb or mutton chop, cocoa, asparagus or baked potato, cereal.  
22 Add 3 eggs, cereal, chop or chicken, dry toast, strained vegetable or baked potato, cocoa, butter, stewed fruit or baked apple, milk toast.

#### MODIFIED SIPPY DIET

First 9-12 days—Milk and cream 1 1-2 oz. every hour 7:00 a. m., to 7:00 p. m.  
3-4 days following—Milk and cream at 7:00, 11:00, 3:00, 7:00; milk and egg, or cocoa at 9:00, 1:00, 5:00.  
4-5 days following—Milk and cream as above; oatmeal, egg, cocoa at 9:00; milk toast, egg, cocoa at 1:00, 5:00.  
To be followed for some weeks—Milk and cream at 7:00, 3:00, 7:00; milk and egg, or cocoa at 11:00; soft diet without acids at 9:00, 1:00, 5:00.

## BOOK REVIEWS

### A Popular Work on Vitamines

**Vitamines—Essential Food Factors**, by Benjamin Harrow, Ph. D., Columbia University, 29 pages and 8 figures, E. P. Dutton & Co., New York, 1921.

"This book is a popular presentation of a subject which concerns every one of us; for vitamins are substances, as yet ill-defined, whose presence in food is essential to our well being; their absence makes life impossible. And what could be a more pressing problem today than that of food!"

"The entire subject of vitamins is not more than ten years old—we ate vitamins before 1910, but we were not aware of it—yet the mass of work that has been done during these few years has added enormously to our knowledge of the science of nutrition. But the results of such research hidden in technical journals \* \* \* is well nigh meaningless to the man who is not a food specialist. The aim of the present volume is to interpret, in terms of our everyday tongue, the language of the research worker. Though 'popular,' the book is, I believe, a very faithful account of the labors of our scientific friends."

These are the opening paragraphs of the book and the author is to be congratulated on the pleasing manner with which he has presented his subject without sacrificing scientific accuracy to make it "popular." Chapters 1, 2, 3 and 4 introduce the reader by easy stages to what may be called the classical ideas of nutrition, such as the calorie requirements and the role which carbohydrates, fats, proteins and mineral salts play in the maintenance and repair of the body. The author then proceeds to take up the relation of the amino acid content (chapter 6) of proteins and their importance in nutrition. With this background the reader is in a position to appreciate the experiments which prove the existence of vitamins A, B and C. The concluding chapter (15) consists of a summary and practical applications that may be drawn from the material presented. The author's advice on practical questions is sound, and, while emphasizing the importance of vitamins he has not allowed himself to be so carried away with the vitamin doctrine that he disregards the other important factors of nutrition. This chapter is singularly free from those forms of food propaganda which detract from the character of a book of this nature.

Since the publication of this book several important contributions to cause and treatment of rickets, and the

heat destruction of vitamins have appeared which will undoubtedly appear in the first revision.

VICTOR K. LAMER.

### Chemical Microscopy

**Elementary Chemical Microscopy**, by Emil Monin Chamot, Ph. D., Cornell University, 162 illustrations and 479 pages, John Wiley and Sons, New York, 1921.

Table of Contents: Illumination of Objects. Illuminating Devices. Microscopes for use in Chemical Laboratories. Vertical Illuminators. Metallurgical Microscopes. Ultramicroscopes. Apparatus for the Study of Ultramicroscopic Particles. Useful Microscope Accessories. Laboratory Equipment. Work Tables. Radiants. Micrometry. Micrometric Methods. Quantitative Analysis by Means of the Microscope. The Determination of Melting and Subliming Points. The Determination of Refractive Index by Means of the Microscope. Crystals under the Microscope. Methods for Handling Small Amounts of Material. The Methods of Microchemical Qualitative Analysis. Characteristic Microchemical Reactions of the Common Elements and Acids When in Simple Mixtures. Preparing Opaque Objects for the Microscopic Study of Internal Structures. Appendix.

The microscope is found in every properly equipped food laboratory, but unfortunately it frequently happens that its full value is not appreciated. Professor Chamot's book outlines the manipulation of the microscope and shows how it serves to shorten and simplify the work of the analyst. The food chemist is well acquainted with the work of Dr. Winton and his excellent treatise on "Microscopy of Vegetable Foods." The intelligent use of the microscope is indispensable in certain phases of food examination. Winton's book assumes a knowledge of manipulation of the instrument, while Chamot's book discusses the general use of the microscope in a very clear manner including among other matters, treatments of subjects such as illumination, ultramicroscopy, magnification, measurement of size of microscopic particles, types of lenses and their particular uses, etc., with scheme of rapid qualitative chemical analysis by use of the microscope. It should be available in every food chemist's library, for even a skilled food microscopist will find in it many valuable suggestions concerning how the microscope may be used to facilitate chemical analyses.

ARTHUR W. THOMAS.



# NEWS OF THE FOOD TRADES

## Heated Controversy Over Consent Decree Modification

### Survey of Conflicting Opinions Reveals Definite Alignment of Practically All Interests Concerned Except the Cannerymen

OPEN hearings on the proposed modification of the packers' consent decree will be held November 28, according to Herman J. Galloway, special assistant to Attorney General Daugherty. This announcement was the outstanding feature of the month in the controversy arising as a result of the recent petition of the "Big Five" packers and certain California fruit growers for a reconsideration of the consent decree, granted by the Department of Justice, February 27, 1920, confining the meat packers to the manufacture and distribution of meat and meat products and restraining them from doing business in wholesale groceries, canned goods and dried fruits.

Attorney General Daugherty has arranged for a committee consisting of Hon. B. T. Hainer, selected by the Secretary of Agriculture, F. C. Hall, selected by the Secretary of Commerce, and Herman J. Galloway, selected by the Attorney General, to hear the contentions both of those in favor and those opposing the modification. Beginning November 28 and continuing as long as may be necessary, this committee will hear at the office of the Department of Justice at Washington, D. C., any one who wishes to present orally his views.

#### Western Cannerymen Favor Modification

Resolutions and counter-resolutions, statements and counter-statements, upholding and denouncing the proposed modification continued to be made during October and early November. Conspicuous among these developments was the stand taken by the Western Cannerymen's Association at a meeting in Chicago, October 3, favoring modification of the consent decree. Immediately following this, a special committee was appointed by the National Wholesale Grocers' Association of the United States to urge wholesale grocers to discuss the issues of the controversy with individual cannerymen. This association placed itself emphatically on record against the modification.

Subsequent to the action of the wholesale grocers, the Cannerymen's League of California, which claims to represent 70 per cent of all the canned goods packers in that state, filed with Attorney-General Daugherty on October 13 a plea opposing the reopening of the decree by which the "Big Five" were shut out of the wholesale grocery business. Shortly afterwards, the California Prune and Apricot Association, representing 11,000 growers, followed with protest resolutions, and the Dried Fruit Association of California, representing 95 per cent of the dried fruit industry, including both independent packers and growers, also went on record as opposing the modification. Other organizations coming out in opposition to the granting of the "Big Five" petition included: The National Coffee Roasters' Association, the National Manufacturers of Soda Water Flavors, the San Jose Merchants' Association, the Illinois Whole-

sale Grocers' Association and the Terre Haute, Ind., Wholesale Grocers' Association.

#### Many Conflicting Opinions

A survey of conflicting opinions on the consent decree indicates that all business and trade interests involved, with the exception of the cannerymen, have definitely taken their stand either favoring or condemning outspokenly the proposals for modification. The cannerymen have shown no unanimity in their attitude. Realizing not only this but the strategic importance of this group, both sides of the controversy, it is apparent, are making efforts to win over the cannerymen. While the Western Cannerymen's Association has gone definitely on record in favor of the modification, the California cannerymen and certain individual cannerymen throughout the country have minced no words in voicing their opposition.

Out of the mass of arguments, statements and denials arising from the dispute, two well-defined, but opposing, lines of reasoning have emerged. Those upholding the position of the packers maintain that serious losses have been suffered during the past year by the fruit growers, the cannerymen and the consuming public because of the failure of wholesale grocers to absorb and move canned products. They point to the fact that the wholesale grocers have not bought canned products during the past year in anything like the amounts of former years. Therefore, they believe newer and more efficient methods of distribution must be devised in the interests of economy, and the packers with their elaborate nationwide resources for distribution and disposal of product should legitimately fulfill this function. Such an arrangement would not only benefit the canning interests, but, more than that, would aid ultimately the entire business situation by bringing to the market products which could never otherwise have been moved. Advocates of the proposed modification maintain that restriction of the packers to the meat industry exclusively on the part of the Government is not only an unnatural restraint upon the ordinary courses of trade but is a measure contrary to the spirit of the Constitution.

#### Opponents of Modification Defend Wholesale Grocers

Opponents of modification of the consent decree, on the other hand, believe that a return of the packers to the wholesale grocery trade would force new restrictions upon distribution, rather than freeing it of old ones. Facilities now at the disposal of the packers, they maintain, make very favorable the formation of a monopoly. Backed by the financial reserves from the profits in the meat industry, the packers will engage, they predict, in underbidding on a large scale and the systematic killing off of competition, with the ultimate effect of ruining the wholesale grocery trade. Spokesmen for the wholesalers go on to say that

at the present time the consumers are buying all they can and that the jobbers are supplying the retail trade with all they can sell. They declare that the producers will have no difficulty in marketing their products for the season of 1921.

Emphatic in all proposals for modification is the belief that a return of the packers to the distribution of canned goods would usher in new economics in the grocery trade. Typical of these is the recent statement of Vernon Campbell that "the five large packers have over 1,200 branch houses located in the principal towns and cities of the United States."

#### Vast Distributive System of Packers

"They have, in addition," Mr. Campbell said, "some 37,000 distributing points in this country, in other words, practically every town and hamlet of the United States. By this decree producers and consumers have been deprived of the most complete and effective system of distribution ever devised. The wholesalers now have a monopoly. They are thoroughly organized. There is now no competition, for the packers were the only real competitors the wholesale grocers ever had."

"Not only does the decree prevent the packers from distributing these foods in this country, but it also prohibits them from exporting."

"The packers have branches throughout all the principal countries of the world. They are the only concerns in this country which have built up adequate foreign food marketing facilities."

"They were rapidly developing markets for canned goods and other American food products throughout the entire world. By this decree they are absolutely prohibited from continuing this export business. Thus cannerymen, farmers and business generally are being made to suffer through the loss of these export facilities at the very time when the country is clamoring for foreign markets."

#### Western Cannerymen Favor Packers

The same keynote was struck in the resolution of the western cannerymen and in the open letters written by prominent cannerymen in response to the protests against modification by the National Wholesale Grocers' Association.

"The course of canned food distribution has been radically disturbed," declared the resolution of the Western Cannerymen's Association, "and serious loss has accrued to the growers of canning crops, to the cannerymen, and to the entire consuming public as a result of the so-called consent decree."

"The effect of this decree," the resolution went on to say, "is seemingly to limit and restrict distributive processes and create monopoly rather than allow free play of competition."

Similarly, in an open letter reprinted in



the current issue of "The Canner," a prominent canner said:

"The sole desire of the canners is for a better and wider distribution of their products.

"The meat packers of the country, during the last few years of their activity, have broadened the distribution of canned foods into channels that have not heretofore been possible through the wholesale grocers. We believe that you will agree with us that the wider distribution of any article, the better the demand and the greater the consumption.

#### Canners Desire Better Distribution

"The attitude of the wholesale grocers during the past year and a half has greatly increased the desire among the canners for a better and wider distribution. We refer to the jobbers' attitude in refusing to purchase futures. The canning industry of the country has never been sufficiently financed for the carrying of large stocks of the finished goods. From time immemorial it has been the custom of the canners to sell their output very largely as futures and to ship as soon as the goods were packed and ready.

"During the most critical period that the canning industry has ever known, the wholesale grocers of the country, who had their own serious burdens to bear, failed utterly to come to the relief of the hard-pressed canners, and it is but natural that the canners are turning for relief to another source of distribution which has been very satisfactory in the past."

"Your wholesale grocers admit," says another canner in reply to a letter from a wholesale grocer, "that the five packers involved in the consent decree can distribute canned goods at a very much less cost than the jobbers. Then, that means just as long as that decree is operative the public pays a tribute to the wholesale grocer. Is there any reason why we, the public, should subsidize your business? If your business, or any other, reaches a point where it cannot by its own service justify its existence, then it should cease to function, instead of crying for help from a public already overburdened from paying economic losses."

#### Distributive Aspects Stressed by Packer Opponents

Protests against the modification, on the other hand, equally stress the distributive aspects of the controversy. Defending the present distributing methods through the large number of wholesalers and jobbers, the Canners' League of California in its recent resolution stated that "this method has made it practical for a large number of independent canners to operate successfully in California, and . . . if the meat packers had been permitted to continue their inroads into the industry in California the net result in a very few years would have been the concentration of the business into very few hands, as was the case in the meat industry."

#### California Canners Favor Present Distribution

"The fruit canning industry of California," this resolution states, "has been built up over a period of thirty years to a point where more fruit is packed in California than in all of the rest of the United States combined, and by a large number of independent operators, practically all of whom distribute through the wholesale grocers. This method of distribution has been economic and has been so organized that the wholesaler has purchased his requirements early each season and, through these early purchases, the canner has been able to a considerable degree to finance his opera-

tions. The advent of the meat packer into the distributing field would disorganize this logical and economic method of distribution, making the purchase of canned fruits by the wholesaler less desirable, and thus interfering with this proper method of financing, particularly the small packer."

In fact, it is this danger of monopoly, referred to in the previous statement, that is probably the chief basis of the opposition to a reconsideration of the consent decree. "We are told," continues the resolution, "that the contention of the meat packers is that they desire again to enter the California fruit industry merely as distributors, but we do not believe the history of the growth of the meat packers bears out any such contention. In the period of their early growth naturally the distributing facilities which they built up were for the purpose of distributing their own products and while now at times their first entry into outside industries is through the distributing end, still we are thoroughly convinced, and believe all the facts will bear us out, that they are primarily manufacturers and that from this base their operations and control are directed both ways, that is, back to the source of production and forward to the means of distribution. We are convinced that if they are permitted to enter the distributing end of the business they will steadily expand into manufacturing and production. The best proof of this is in their operations through the California Co-operative Canneries. Already Armour is alleged to, and we believe does, control not only the canning plants, but also, through crop advances made by California Co-operative Canneries, controls many orchards.

#### Crisis Attributed to Economic Conditions

"We are informed that the advocates of modification of the consent decree assert that a need exists for this added means of packing and distributing, and base this on the claim that soon after the consent decree became operative, prices fell and many canneries throughout the country suffered severe losses. We do not believe anyone would take this contention seriously, for the reason that, as everyone knows a general change in economic conditions came at this time which brought about even sharper reductions in prices for rubber, cotton and practically all commodities. If this claim should be true, we submit that the ramifications of the packers' operations are far greater than generally understood and therefore their control was far greater and more dangerous than people realize."

Commenting in the same vein on the dangers of monopoly, "The Fruit News," in a recent editorial says:

"With unrestricted opportunities, the enormous resources at present under the head of the meat packing group might easily quite materially restrict the facilities for economic distribution of foods rather than otherwise, and it was just this very sort of thing that brought about our anti-trust laws and under that legislation caused the Government to restrict the enlargement of the meat packing group's opportunities and the encroachment of their endeavors upon other lines of business than their primary one. The theory and the facts in matters of the sort seem too often to be separated quite definitely. Most people agree that the theory of many of these moves is sound, but history makes one wonder if in this case the facts will follow as the theory suggests."

#### Control of Canning Industry Feared

Opponents of a modification of the decree see not only possibilities for monopoly in distribution, but in addition the control and

ultimate ownership of the canning industry by the packers. "Should the packers succeed in crippling the wholesale grocers," says R. W. McCreery, of the Marshall Canning Company, one of the several dissenters from the resolution of the Western Canners' Association, "nothing will prevent them from crippling the canners. If they are successful in marketing canned goods in competition with the wholesale grocers, does it not seem logical to assume that they will enter the producing end of the business and become a thorn in the side of the canning industry?"

#### Toulme on Decree

In another open letter addressed to the entire canning trade, M. L. Toulme, secretary of the National Wholesale Grocers' Association and spokesman on behalf of this group against modification, asks some more pertinent questions on this subject:

"In case the meat packers gain a commanding position in the distributing field, who would decide when your products would be bought and how much would you get for them? Did the policy of the meat packers the short time they were active in the canned food business indicate that they would be satisfied to remain simply distributors? Isn't it a fact that their so-called financing of canners resulted in their controlling canneries, thereby becoming the active competitors of the independent canners? Some are inclined to minimize the possibilities of the meat packer being desirous or able to dominate the production and distribution of food products. Does not the history of their development of their meat business give you some idea as to their policies and what they intend to do if they can secure modification of the consent decree?"

If the packers win or lose in the present instance, however, J. W. Herscher, president of the National Wholesale Grocers' Association, sees only failure for them in the long run. "One of two things will happen," this official predicts. "The Government will forge new bars which in comparison will make the present restrictions look like fancy ribbons. Or the Government will conclude that a food trust is uneconomical and unsocial, change all laws and adopt a regulatory program that will make the 'Big Five' wish they had never dreamed about the general food business."

#### Milwaukee Exposition Brings to Life Food Trade-Marks

More than 110,000 persons of Wisconsin and Illinois attended the third annual Milwaukee Food, Household, and Electrical Exposition given by the Milwaukee "Journal" during the week of October 25 to 31. While the event was primarily for the local retailers, there were several features of special interest to the manufacturers. Chief of these in the food field was the advertising pageant, which was a novel presentation of advertising packages brought to life. Dancng pupils of one of the local schools participated in this unique entertainment given every afternoon and evening of the exposition and disported themselves in roles ranging from Aunt Jemima and the Calumet Baking Powder Kids to the Corn Flake Girl and the Variety Kids. Some of the large firms participating in this feature were the Grennan Cake Corporation, Detroit, Mich., the Pyramid Oil Company, Minneapolis, Minn., the Foulds Milling Company, Chicago, Ill., the Wisconsin Butterine Company, Milwaukee, Wis., and the Gridley Dairy Company, Milwaukee, Wis.



# Dried Fruit Exports Run Into Eight Millions

Increased Domestic Demand Does Not Prevent Supplying Foreign Buyers, Says Report of N. Y. Department of Farms and Markets

Despite the increased consumption of dried fruits in the United States, there is still more than enough to go around, according to a recent compilation of food-stuffs leaving the port of New York, made by Hershel Jones, director of the New York office of the State Department of Farms and Markets.

Dried fruit exportations in September this year from New York, according to these figures, ran almost into eight million pounds, England being the heaviest buyer. Dried peach exports to England amounted to 117,975 pounds and those to France, 38,500. Small shipments were made to other countries. The export of dried prunes amounted to over five million pounds. The export of raisins totaled 1,865,052 pounds. England was the heaviest buyer of these dried products, her purchases in September amounting to 3,791,946 pounds of prunes and 1,555,140 pounds of raisins. France purchased 1,202,100 pounds of prunes.

## Large Bacon Exports to England and Germany

Over 31 million pounds of bacon, the report goes on to say, were exported through the port of New York in September. The best foreign buyers were England and Germany, which two countries bought nearly 6,700,000 pounds each. Holland bought slightly over four million pounds, France and Belgium about two and one-half million pounds each.

Beans and onions were exported in larger quantities to Cuba than any other country in September. Of the 18,434 bushels of beans exported, Cuba received 11,137 bushels, the next largest importer of beans being Newfoundland, which purchased 1,332 bushels. Over 15,000 bushels of onions were sold to Cuba in September out of a total onion export of 21,267 bushels.

The figures compiled by the State Department of Farms and Markets show that in September, 29,465 dozen eggs were exported. Of this amount, 15,000 dozen were destined for England, which also imported from the United States egg yolks to the value of \$7,970, which latter sum was almost the total value of the egg yolks exported.

## Large Butter Exports for South America

The total exports of butter through the port of New York in September amounted to 218,330 pounds. The largest purchasers were Trinidad, Haiti, British Guiana and Panama. The total September butter exports were about 65,000 pounds less than those in August.

The total September cheese exports were about twice those of August. The largest importer of this product from the United States in September was Sweden, which bought 82,459 pounds. France came second with 52,606 pounds, and Switzerland third with 44,403 pounds. Cuba was fourth with 39,993 pounds. The smallest amount of cheese was bought by Spain, which imported only 25 pounds in September.

## Germany Buys Evaporated Milk

In September 24,913,582 pounds of evaporated milk were exported through the port of New York, according to Custom House figures compiled by the State Department of Farms and Markets. The largest buyer was Germany, which purchased 7,460,551 pounds. England came second, buying 6,757,609 pounds, France third with 4,722,085 pounds, and Poland fourth with 2,821,970 pounds. Almost one-half of the powdered

milk exported was destined for Germany. Holland and England were also large importers of American powdered milk, the total exports of which amounted to 2,110,890 pounds in September.

The total exports of condensed milk through the port of New York amounted to 7,625,864 pounds in September. The largest importer of condensed milk was Cuba with 1,861,233 pounds. England bought the second largest quantity, 1,698,348 pounds, Germany the third largest, amounting to 1,356,850 pounds.

## Coffee Imports Forty-five Millions

Custom House figures show that approximately 45 million pounds of coffee were imported through the port of New York in September. In that month over three million pounds of tea were imported. Approximately an equal amount of coconuts were imported. Over one million bunches of bananas were unloaded at New York City in September. Nearly two million pounds of currants were received from Greece.

## Vinegar Trade for Package Goods Now

An interesting swing of the pendulum from bulk to package goods is reported in the vinegar trade, where some of the more progressive vinegar producers have arrived at the conclusion that they might as well become specialty men as well as to sell their bulk product to the bottler. They find, according to the New York "Journal of Commerce," that if they bottle their own brands they are just that much ahead in the consumer's estimate. For years and years past vinegar makers have been accustomed to perform their marketing by barreling the vinegar and shipping it by carload, allowing the retail trade or jobber to bottle, if he wants to, or sell it in bulk. "Old timers" point out that, in most sections of the country, the bottling of vinegar on a large scale is not profitable at the present time and that this method of marketing vinegar requires advertising and education, increased labor and great detail.

They say that the people are satisfied to get good vinegar from their grocer by the jug or fruit can, or in other ways, and why disturb the business? Sit down with any big producer in the East and he will figure it out for you, so that you will be convinced that bottling belongs to another trade entirely.

On the other hand, the progressive younger men in the business are turning more and more to the bottling of vinegar, and from year to year their bulk business is becoming less. They say that the modern way of putting up food products is in the individual package, that the housewife likes it that way; that the trend of the manufacturing of such products is all in that direction; that the housewife does not like to bother sending a jug to the grocer or buying a jug or a fruit can, even though she is rebated for its return; that vinegar put up in a "classy" bottle, with attractive labels, sells itself.

## N. V. Adams with Nucoa

N. V. Adams has recently been appointed advertising manager by the Nucoa Butter Company, New York.

## Clean Product, Clean Package

"For the same reason that a man prefers to eat his meals from a clean tablecloth he prefers to get the butter and margarin he eats in a clean and attractive package. It helps him to get more enjoyment from his food, and that means he really gets more value out of it, even though carelessly packed products may contain just as much food value as those that are put up carefully," says a bulletin of the Department of Agriculture.

"The package into which butter is put is of more importance than most food packages, because the product which it holds is extremely sensitive to outside influences, especially odors. Men who have made a business of studying market conditions and methods have long given attention to the package problem and they are still at it. This year at the National Dairy Show, held in St. Paul, Minn., October 8 to 15, the United States Department of Agriculture had an unusual show of butter packages that proved of as much interest as a lot of curios. The department has collected packages from the various countries of the world that make butter in considerable quantities, and they were shown in comparison with packages that are used in our own country. In addition, there were examples of good and of poor packing."

## Aunt Jemima Company Protects Trade Marks

How the United States courts protect the trade-mark of a popular food product, forms the subject of an interesting booklet just published by the Aunt Jemima Hills Company of New York, Chicago, and Boston. This concern has had unusual experience along this line on account of the fact that the trade-marks of its brands have been imitated and infringed upon in a great number of cases. In each case the company sought the protection of the courts, and the favorable results of the most important of these cases are set forth in the booklet.

"The company wishes it understood," says a brief introduction, "that in the future, as in the past, it will avail itself of every just means to protect its trade-mark against infringement or misappropriation. It is hoped that this booklet may save some from unwise and regrettable steps in the creation of trade-mark devices. It is offered to all who have any part in the designing of or use of such devices both as a source of information as to what the courts have done to protect us in our trade rights and as a friendly warning to respect them."

## Articles from American Food Journal Included in the Industrial Digest

Readers of The American Food Journal will be glad to know that many of the important articles published will be referred to by the new weekly, "The Industrial Digest," which abstracts the informative articles from nearly six hundred leading trade and technical publications. Digests from this magazine will appear under the classifications, "Food and Beverages," "Sugar and Confectionery" and "Packing, Canning and Refrigerating." An annual index will be issued, supplying readers with a comprehensive review of the most important articles in our paper as well as articles from each of the other six hundred periodicals. The new weekly will be issued by the Periodical Digest Corporation, 25 West 45th Street, New York City.



## Demand Falls Off for Prepared Milk

### Both Export and Domestic Sales of Condensed and Evaporated Product Decline

According to the Federal Bureau of Markets, the condensed and evaporated milk markets are again unsatisfactory, due to diminishing export business and little domestic demand.

"This growing lighter demand," said a statement from the bureau recently, "in the face of quite heavy supplies, accounts for lower selling prices, which during September were reduced to both foreign and domestic trade. But with prices for milk used in manufacturing remaining practically unchanged, even up through the current month, per case costs have been relatively higher and some manufacturers report that prices quoted were almost at cost.

#### Heavy Export Movement

"The heavy export movement during August and September was largely composed of shipments for relief purposes, and it is stated that practically the last of these orders have been filled or will be filled shortly. Other export business has assumed small proportions compared with what many dealers have expected, and the general situation is not regarded as encouraging. It is expected that the more commonly known brands will be the last to feel the pressure of the dullness which appears prevalent.

"Statistical reports from manufacturers confirm what has been said regarding the general condition of the market. While the latest available reports of stocks are as of October 1, current comment suggests no material improvement in the situation. On a comparative basis October 1 stocks of all classes of goods were lighter than the previous months. This would be expected following the fairly heavy movement during September and the seasonal decrease in production.

#### Stocks Increase During September

"But the fact that condensed goods were sluggish even during September is shown by the fact that stocks of this particular class increased slightly during that month. Manufacturers' unsold stocks also increased during September, and unfilled orders decreased. The statements apply principally to case goods, as bulk goods manufacturers, many of whom depend more or less upon local or nearby demand as an outlet, carry much smaller stocks in reserve, and have more of a tendency to divert raw material into other products when the market begins to show signs of becoming stagnant."

Regarding the heavy exports in August and September the bureau says:

"Evaporated milk again constituted the bulk of exports during September, and total shipments of this class of goods were 6,000,000 pounds, heavier than during August. September movement of evaporated milk into export channels amounted to almost 29,000,000 pounds, over three times the amount of condensed milk shipped from domestic ports.

#### Cheap Sugar Favors Exports

"The excessively heavy movement of evaporated goods is said to be due to sugar prices, which in Europe, where beet sugar is obtainable, are relatively lower than in

this country. By purchasing evaporated milk there is a saving not only through a lower per case price, but also because of the absence of sugar, which can be supplied cheaper and without the addition of freight costs.

"The United Kingdom, France and Germany were the heavy receivers of both evaporated and condensed milk during September. The combined exports for the first nine months of this year were over 137,000,000 pounds less than during the same period of 1920, and it was only during August and September that this year's movement was heavier than corresponding months a year ago."

## Food Analysis Bureau Urged for Restaurant Association

Establishment of a department of chemistry for the analysis of foods was one of the principal recommendations made at the annual convention of the National Restaurant Association at Los Angeles during the last week in October. J. E. Dunn, Portland, Ore., president of the Pacific Coast Dairy Association and four other associations, spoke in favor of such a department and suggested in addition a department of labor to promote harmony between employer and employee and a legislative department to establish legal requirements for those in the restaurant business.

Washington, D. C., won the fight for the 1922 convention over Springfield, Mass.

Harry S. Baldwin, Springfield, Mass., was elected president of the association. Horace Boos, Los Angeles, formerly a director, was chosen second vice-president, while other officers for whom the secretary was instructed to cast a unanimous ballot were: J. O. Mills, Columbus, Ohio, re-elected first vice-president; Harry Boekenhoff, Des Moines, Iowa, third vice-president; Myron Green, Kansas City, Mo., re-elected treasurer.

Directors for year are: Guy Gundaker, Philadelphia, Pa.; Harry H. Miller, Pittsburgh, Pa.; Ben Rosenfeld, Washington, D. C.; Miss Annie C. Jewett, Chicago, Ill.; R. D. Clark, Cleveland, Ohio; C. A. Shay, Salt Lake City; Guy C. Taylor, Kansas City, Mo.; Z. K. White, San Francisco; Harry Joyce, Portland, Ore.; and John Welch, Omaha, Neb., retiring president.

## Boston Wholesale Grocers Elect Officers

The Boston Wholesale Grocers' Association has elected the following officers: President, Benjamin F. Bullard; vice-presidents, Stanley H. Eldridge, Herbert L. Kelley; treasurer, Clarence E. Hanscom; executive committee, Winthrop C. Adams, Arthur G. Williams, Austin L. Baker, B. H. Bahn, Joseph I. Curtis; legislative committee, George H. Carter, W. H. Eckert, Rufus D. Adams; arbitration committee, Charles J. Barton, F. E. Hathaway, E. C. Hall, A. J. Reed, Wm. J. Day; transportation committee, W. D. Eaton, P. T. Eagan, Harold C. Manson; weights and measures, W. D. Currier, George T. Everett, J. S. Shepherd.

#### Little Rock Canning Plant to Resume

The Good Canning Company, Fort Smith, Ark., has started operations for the season's run of four months. Approximately 100 people will be employed. The plant at present is canning sweet potatoes.

#### Campbell Soup Plant to Resume Operations

The Campbell soup plant at Hammond, Ind., which has been idle for six months, will resume operations January 1 with a full force of 700 men.

## Prohibition Occupies Soda Flavor Men

### Full Co-operation with Prohibition Unit Offered—Protest Against Increase of Alcohol Tax

Resolutions opposing the excess profits tax, favoring the sales tax, protesting against the packers' consent decree and offering full co-operation to the Prohibition Unit in the enforcement of the Volstead Act, were the principal features of the sixteenth annual convention of the National Manufacturers of Soda Water Flavors, held in St. Louis October 24-26.

The association went on record as being opposed to any violation of the prohibition law and declared that "it would do all in its power to see that its members comply with the spirit and letter of the laws and that we investigate applicants for membership in our association, with special reference to their observation of the prohibition laws."

Harry Whittle, president, Whittle & Mutch, Philadelphia, was elected president of the organization. Other officers elected included: Vice-president, W. S. Bickford, Crescent City Carbonate Company, New Orleans, La.; treasurer, H. E. Harrison, Liquid Carbonate Company, Chicago, Ill.; secretary, Thomas J. Hickey, Chicago, Ill.

Directors elected to office included: D. W. Hutchinson, W. H. Hutchinson & Son, Chicago, Ill.; Charles O'Connor, S. Twitchell Company, Philadelphia, Pa.; H. C. Schranck Company, Milwaukee, Wis.; W. F. Meyer, Warner-Jenkinson Company, St. Louis, Mo.; W. H. Hurty, Hurty-Peck & Company, Indianapolis, Ind.

Protest against an increase in the tax on alcohol used in the manufacture of flavoring extracts was voiced at a special meeting of the association held at Washington, previous to the annual convention. "We are unalterably opposed," stated the resolution adopted at this meeting, "to the proposition of requiring the payment of a tax of \$6.40 per gallon on alcohol, with the privilege of applying for a refund of \$4.20 upon proof that the alcohol was used in the manufacture of flavoring extract, because this method would result in the manufacturer passing the \$6.40 tax on, thereby causing an increase of more than 100 per cent to the ultimate consumer. Moreover, when the refund is made, it will go to the manufacturer and not the consumer."

## Southern Pacific Warehouse Completed

Completion of the Southern Pacific wholesale grocery warehouse, which with tracks and wharves cost a total of \$1,620,000, is announced by the Southern Pacific. The building is located at Third, Fourth, Channel and Berry Streets, San Francisco. Every modern convenience for the handling of merchandise with the minimum possible labor has been installed. The building is 825 feet long, 100 feet wide, six stories high and is a fireproof reinforced concrete class A structure. It is equipped with eleven elevators, spiral chutes and conveyors, a sprinkler system and pneumatic tubes for mail. The work was started June 7, 1920. It adjoins the Southern Pacific Company's freight terminal and also has deep water frontage.



## Emery Mapes and Advertising

The death of Emery Mapes, of Minneapolis, marks the passing of not only the founder of one of the greatest food manufacturing organizations in the world but also the father of the so-called "Minnesota School of Advertising." Mr. Mapes believed in his product from the time he toted a sample case of Cream of Wheat from hamlet to hamlet all through the spring wheat states back in the nineties. Even in his years of plenty he refused to carry side lines for fear of diverting his efforts from his chosen life work—"selling the nation" a great food product. His merchandizing methods, though discouraged at the start, have been an inspiration to many of those who after him have successfully sold their product. Rastus, the beaming Ethiopian, with a rakishly tilted chef cap, is still a legend among the food advertising men of today as the perfect example of what "simple copy," coupled with persistency can do for a product. Mr. Mapes believed that the primary argument for a food was that it pleased the palate. This was the chief theme of his advertising. With what effectiveness it was used, the great plant at Niagara with its thousands of employees bears eloquent testimony.

## New Horlick Food-Drink

A new lunch and breakfast food-drink that is a combination of the soluble extract of malted cereals, cocoa, and whole milk, reduced to powdered form, has been put out by the Horlick's Food Company of Racine, Wis. The new product, Malte-Chocla, it is announced, may be prepared in a few seconds by thoroughly stirring or whipping the powder in hot or cold water, no boiling being required.

Malte-Chocla is designed as a food-drink for breakfast and at other meals, also supplying a quick, light lunch. It is being put up in two sizes, retailing at 35 and 60 cents.

## Com-Unity Store Sales Company Organized

Incorporation papers were filed in the Birmingham, Ala., probate office by Com-Unity Store Sales Company, giving 2014 First Avenue as its main office and giving as its objects the exploitation of copyrights, patents and trade-marks owned by it and the licensing of grocery merchants throughout the United States to use a system of selling groceries protected by these rights.

The company claims that while its system includes all the modern methods recently inaugurated a distinctive feature of the new system is the use of "membership certificates," for a monthly consideration, which entitles the holder to purchase groceries in retail quantities at wholesale cost.

## U. S. Leads Competitors in Latvian Foodstuff Imports

The United States was ahead of competitors in all foodstuff imports into Latvia with the exception of conserved meat, according to Commissioner H. Lawrence Groves at Riga. In lard, this country shipped 249,012 pounds compared to Germany's 78,956, Denmark's 133,632 pounds and 154,548 pounds from all other countries. In bacon, the United States sent 3,060 with no competitors in the field. In conserved meat, however, Denmark was in the lead, furnishing 11,988 pounds, the United States sending only 432 pounds and all other countries 1,728 pounds.

# Urges Coffee Roasters to Watch Tariff

## Brazilian Ambassador Declares Duties Injure Trade—Distributors for Consent Decree

That the coffee distributors and roasters of the country should use their influence with Congress to prevent the passage of tariff legislation that would hamper foreign trade, was urged by the Brazilian Ambassador to the United States, the Honorable Augusto Cockrane de Alencar, in the course of an address before one of the sessions of the eleventh annual convention of the National Coffee Roasters' Association at the Hotel Astor, New York, October 31-November 3.

The ambassador suggested that the Association appoint a committee to go to Washington for the purpose of pointing out to the legislators there, who are considering the revision of the tariff, that if they imposed a heavy duty on coffee from Brazil and other nations, it would result in the reduction of the goods that Brazil could buy from the United States.

Accompanying the ambassador was a delegation from the Sao Paulo Coffee Commission. Three representatives of the Chamber of Commerce of that state accepted invitations to visit Chicago, St. Louis and New Orleans, extended by the coffee trade of those cities. The Brazilians, who are John de Mello, Roberto Noiac and Achilles Israel, will return to New York November 15 and sail for Brazil November 24.

### Oppose Packers' Petition

Protest against modification of the packers' consent decree was voiced in a resolution adopted by the convention. The resolution recites that on February 27, 1920, a consent decree was entered in the United States Supreme Court under which the "Big Five" meat packers were enjoined from manufacturing, wholesaling and retailing food products generally, including coffee.

The resolution continues that California interests representing Armour & Co. have petitioned the Attorney-General to set aside the decree. Their protest against the granting of the petition reads:

"The National Coffee Roasters' Association emphatically protests against any modification of the consent decree, believing that the effect of such modification would be the concentration in the 'Big Five' meat packers of the control of the nation's food supply and the creation of a monopoly which would destroy the business of the independent producer, manufacturer and distributor, to the irreparable injury of the public."

A resolution was passed calling for the adoption of a uniform guarantee among shippers providing for the appointment of a committee in the case of disputes to arbitrate them. The association will try to get the Brazilian delegates to take up the question and agree upon it while they are in this country.

### Importance of Traffic Research

Robert L. Stover, reporting on the work of the traffic department, said that real traffic work is a really new field of endeavor. Not many years ago business concerns paid little attention to the matter of transportation of their business, he said. They did not find out whether or not there was a cheaper rate than that charged by the railroads, neither did they verify weights.

"Even today," said Mr. Stover, "a great

many concerns do not realize the importance of this part of their organization familiar with traffic. Their claims are invariably rejected by railroads for some reason or the other, which, in many cases, are not correct, and further investigation would have developed that the claim should be paid.

"The classification committee attempted to raise rates on coffee during the first part of the year. The association protested vigorously and the matter was abandoned."

### Want Green Coffee Men in Organization

During the coming year the association is going to put forth strong efforts to get the green coffee men into their organization. It is felt that their interests are bound up with the coffee roasters.

The following officers were elected for the ensuing year: President, J. O. Cheek, Nashville, Tenn.; first vice-president, Webster Jones, San Francisco, Calif.; second vice-president, J. E. Maury, Memphis, Tenn.; treasurer, Frank Ennis, Kansas City, Mo.

Directors for three-year term: F. P. Simme, Duluth, Minn.; William Fisher, St. Louis, Mo.; Ross W. Weir, New York City; Nathan Eckstein, Seattle, Wash.

For one-year term: O. L. Plumly, Chicago, Ill.; J. Reily, New Orleans, La.; R. W. Whitehill, Warren, Pa.

The next convention of the association will be held in New Orleans at a time to be decided later.

## Civil Service Examinations for Food Specialists

The United States Civil Service Commission announces an open competitive examination for specialist in the chemistry of food preparation on December 14, 1921. A vacancy in the States Relations Service Office of Home Economics, Department of Agriculture, Washington, D. C., at \$2,200 to \$2,500 a year and vacancies in positions requiring similar qualifications at these or higher or lower salaries, will be filled from this examination "unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion."

Applicants should at once apply for Form 1312, stating the title of the examination, "specialist in the chemistry of food preparation," to the Civil Service Commission or to the secretary of the local United States Civil Service boards. Applications should be properly executed, excluding the medical certificate, and must be filed with the Commission in time to arrange for the examination.

## Government to Bring Down Retail Meat Prices

Broad and important plans are being formulated by the Department of Agriculture to bring down the retail meat prices to the American people, according to a recent report. The department has not yet announced its plans, but it is learned from authoritative sources that it was giving the subject serious consideration.

A widespread investigation has been made by the department as to retail meat prices. It has been discovered that retailers of meats are making profits more than double what they were before the war. The exact figures are about 117 per cent higher.



## More Meat Bought, Say Packers

### Influenced by Low Prices, American Public Using Staple Commodities in Increasing Amounts

That the American public is now willing to buy staple commodities in large volume provided the prices are considered low enough, is the conclusion reached by the Institute of American Meat Packers in its November bulletin. Basing its statement on the October trade figures just compiled, that organization reports a normal volume of production in practically all of the packing plants and normal disposal of products through the regular channels.

There has been a large volume on sales of both beef and pork products. But this volume has been created on a basis of low prices. For example, the average wholesale price of carcass beef at the end of October has been on a parity, perhaps even a little below, the average price in 1914. The average wholesale price of carcass beef in 1914 approximated twelve cents; at the end of October, 1921, it was between eleven and a half and twelve cents and is no higher now. In fairness to the retailer, it should be remarked that some grades are selling much higher, just as other grades are selling much lower; also, that the retailer cannot sell all of the cuts at the same price. Steaks and roasts, which constitute only a small part of the carcass, must be quoted to the consumer at prices much higher than the average carcass cost.

It will be of interest to American industry generally to note the results of the packers' policy of not fighting readjustment of commodity values; of constantly reducing quotation to a point at which the products would move; of going ahead with operations on a normal scale instead of suspending or severely curtailing production in an effort to bolster falling values or reduce losses by curtailing the supply.

#### Normal Volume of Production

The result of this policy is that the packing industry in a year of severe readjustment has been accomplishing a normal volume of production and disposing of it through trade channels.

The following table, giving the figures for Federally inspected slaughter, shows the trend of production during the first three quarters of 1921, as compared with the first three quarters of 1913:

Federally Inspected Slaughter			
Nine Months Ending			
with September			
Kind of Meat Animal	1921	1913	
Cattle .....	5,586,217	5,084,472	
Calves .....	2,947,215	1,500,000	
Sheep .....	9,789,104	10,350,390	
Swine .....	28,862,389	24,388,148	
Total, All Kinds ....	47,184,934	41,323,010	

It is true that this production has been marketed at relatively low values, but it has been marketed in normal volume. It has passed freely into consumption and thereby left the industry in very strong position with respect to current operations. Government figures showing stocks of meat in cold storage indicate that there was no heavy surplus left on hand as a consequence of the industry's determination to turn out its products in normal volume and offer them at whatever prices would move them into consumption. At the end of September cold storage stocks were smaller than they had been for many years. Gov-

ernment figures are not yet available for stocks at the end of October.

Raw material has been obtainable in many cases only at prices which were higher than product values would justify. Hogs, for example, are selling relatively higher than pork products taken as a whole.

#### Shipments to England Reduced

In the early part of October spot prices for lard and meats in the United Kingdom were considerably under parity with prices in the United States. As a consequence, shipments of these commodities to English buyers were very much reduced. This reduction, in turn, caused an upward reaction in prices in the United Kingdom.

## "Perfect Package" Movement Gets Results

### Already an Awakening Consciousness of Huge Losses Due to Careless Packing

The "Perfect Package" movement, conducted during the current month by the railroads, steamship lines and express companies and actively supported by the Post Office Department, has already had far-reaching results, according to Stanley W. Todd, of the American Railway Express, New York. In a statement prepared for The American Food Journal, Mr. Todd states that as a result of the campaign there is already an awakened realization that the nation's carriers depend upon the shipping public to co-operate with them in the improvement of the transportation service and the curtailment of the losses it has encountered in the movement of commodities.

"That this great economic loss is a burden not only to the carriers but to the general public," Mr. Todd declares, "is apparent from the fact that in 1920 it amounted to \$150,000,000 for the rail carriers alone. Not all of this loss, of course, was due to careless packing, but enough of it could be charged to indifference on the part of shippers as to the condition and safety of their commodities, to make it worthy of special study in the distribution of food.

"It is not a simple problem," continues Mr. Todd. "The highly perishable character of many of these foods and the quickly changing markets, make it necessary for the carriers to transport their commodities in the most expeditious manner possible. That involves extra hazards in transportation and makes it imperative that the containers used for moving fruit, vegetables, poultry, fish, meats and other articles of food must be so constructed as to give the commodity thorough protection en route. What constitutes a 'perfect package' for any of these staples cannot accurately be described, but during the recent campaign 'perfection' meant simply compliance with the various regulations of the carriers as outlined in the classification for each of the several products.

#### Shippers Best Qualified to Determine Methods

"In other words, the transportation companies ask that the shipments be so prepared or packed as to insure safe transportation, with ordinary care on the part of the transportation company." The railroads and express carriers do not claim that

The British bought conservatively during the month, taken as a whole. Their purchases were principally lard and hams and shoulders, along with some bellies (the bacon cut). Lard stocks in the United Kingdom were depleted, and the English lard orders were made by way of replenishment. The demand for hams was attributed to the prospect of Christmas trade on this meat.

On the continent the relationship between foreign and domestic prices with respect to lard was somewhat like that in Great Britain; that is, the continental prices were less than the prices in America plus shipping costs. But the depletion in lard stocks at home became a market factor, and European prices showed an advance, accompanied by a steady demand for lard from spot stocks.

Foreign buying, particularly in Great Britain, has shown itself sensitive to price conditions and has indicated more than once that brisk trading was waiting on lower values.

they are themselves expert on the best packing methods for various kinds of shipments offered for transportation; they believe that the shippers themselves are better qualified to determine what are the best methods. But the transportation agencies do affirm that they know what 'imperfect packages' are because they are the first to see what happens when a shipment breaks down and often have to suffer by the payment of claims for loss or damage.

"Take the most popular food of the breakfast table—eggs—as an example of how serious these losses in food can be. In 1920, as recent reports indicate, the American Railway Express Company paid out in claims for loss of or damage to eggs, the sum of \$1,267,000. What the railroad losses on egg shipments amounted to during last year is not stated, but they were substantially higher, as the bulk of the egg traffic is handled by freight.

#### Difficulties in Marking

"Taking other foods, like fruit and vegetables, the carriers urge the use of crates and containers which each trade considers are the essentials of a 'perfect package.' In fact, the Government through the Bureau of Standards, and the Bureau of Markets, had aided in the development of shipping containers and the carriers have so adjusted their classifications that the principles of good packing of all kinds of fruits and vegetables are well understood by producers. Generally speaking, the packing methods of these industries are satisfactory to the carriers. One of the chief troubles is encountered more in connection with the marking than with the packing, because in practically every case quick transportation must be afforded, in order to prevent spoiling of the commodity or loss as a result of a changing market.

"Good marking and the acceptance of shipments by consignees will do more to prevent losses in the transportation of food products than perhaps any other feature of transportation except refrigeration. If the carrier handles a shipment and cannot make delivery, because of an inaccurate address and the lack of the shipper's name and address, there is no alternative but to dispose of the commodity at the best prices obtainable.



# THE OBJECTS OF THIS ASSOCIATION

One of the fundamental Objects of this Association, which was incorporated in its Constitution at the time it was organized in 1884, was to promote uniformity between Federal and State Pure Food Laws; and to co-operate with the Federal and State Food authorities in the enforcement of such Laws.

We are furthermore pledged to promote in every reasonable and practical way the maintenance of strictly sanitary conditions in the manufacturing of candy, and to this end we urge the Food and Drug Officials to give special attention to the enforcement of sanitary conditions, in all factories where candy is manufactured; with the assurance that we will consider it a privilege to co-operate with them in the technical and absolute enforcement of the Laws regulating such conditions.

## NATIONAL CONFECTIONERS' ASSOCIATION of the UNITED STATES

111 West Washington Street  
Chicago



## Reciprocal Tariff Reductions Proposed by Canned Goods Committee

### Newly Appointed Advisory Unit of Department of Commerce Investigates Canning Conditions at Home and Abroad

A canned foods committee consisting of prominent leaders in the trade has been established by the Department of Commerce to advise with Secretary Hoover on matters pertaining to foreign and domestic business in canned products.

The new unit will be under the general direction of L. G. Montgomery, chief of the Foodstuffs Division, Department of Commerce. B. Hart, for many years connected with the Bureau of Food and Drug Inspection and later with the National Canners' Association, has been appointed special agent for canned goods.

The canners' advisory committee recently met in Washington and in preparing a tentative initial program for the consideration of the department, filed a compilation of canning statistics taken from the census figures just issued, which showed the valuation of the canning output to be over \$800,000,000 annually. The conclusions of the committee were that the Bureau of Foreign and Domestic Commerce could be helpful along the following lines:

#### Information Which Canners Seek

"By accumulating information showing the consumption of canned foods in foreign countries of importance; the amounts produced at home, the amounts imported of canned milk, sardines, tuna, salmon, meats, soups, peas, corn, tomatoes, other vegetables, apples, pineapples, peaches, apricots, pears, and other fruits; the respective countries of origin; the rates of duty applicable to goods from this country and cases of discriminatory tariffs.

"By instructing consuls and commercial attaches of the general misapprehension of so many foreign nations in classifying canned foods as luxuries, whereby said countries deprive themselves of needed revenues to no purpose, with further instruction to ascertain what can be done to secure proper classification.

"By helping to make representations through the official channels of the Bureau of Foreign and Domestic Commerce as may lead to a fairer adjustment of the tariffs of those countries from which we are importing canned foods on a very much lower rate of duty than they levy upon ours.

"By helping to prepare regulations regarding the making of packages, weights, food standards, trade-marks, custom house rulings, etc.

"By arranging a closer co-operation between the bankers and merchants of this country so that when foreign government loans are floated in this country efforts may be made coincidentally to secure more favorable consideration for our exports—a practice followed successfully by Great Britain and Germany in the development of their foreign trade.

"By assisting in the negotiation of reciprocal reductions or commercial treaties looking toward tariff readjustments."

#### Reciprocal Tariff Reductions

Discussing this last proposal, the statement of the canned foods committee called attention to the equitable and favorable economic features of the new tariff bill, from the standpoint of the countries with which we are trading. "Many of our neighbors," this bulletin declared, "seem to take it for granted that we are the only nation levying a tariff of a restrictive sort, when, as a matter of fact, the rates pro-

posed in the new tariff bill average lower on the products admitted from many of the Latin-American countries than the rates levied by them on products we would like to ship to them. We hear constant complaint of our tariffs from the representatives of some of these countries, but apparently there is no agency of our Government which feels quite free to call their attention to their own unfriendly tariffs.

"It is believed that Section 302 of the special provisions of the pending bill should be amended so that the conditions may apply to products of the same general classification which the foreign countries in question desire to export to us. For example, France exports canned peas, canned fruits and sardines to us, and these are admitted upon payment of a reasonable tariff. We may not expect to export these identical products to France, but there are other canned foods, such as canned milk, salmon and fruits which are required to pay a much higher tariff than the canned foods from France. Similarly some of the Latin-American countries' canned meats which are admitted here upon the payment of a reasonable tariff, while on the other hand our canned fish and milk, vegetables and fruits are met with prohibitive rates of duty.

"During many years efforts have been made through the Department of Commerce and the Department of State to solve this difficulty through channels of diplomacy but without satisfactory results. We are forced to the conclusion that we must have something to offer, something to trade with, and we respectfully request that the Department of Commerce use its influence so far as it consistently can in connection with pending tariff legislation. This recommendation is made with the knowledge of the fact that the Department of Commerce is administrative in its functions, but, it is our firm conviction that the lack of opportunity to negotiate for the practical exchange of commodities has led to unnecessary misunderstanding and irritation, while the application of ordinary trade principles would seem to promise relief from misunderstandings and the development of a fair exchange of products upon economic principles."

#### Improving Exchange Conditions

Better buying abroad and a more even balance of trade are the two recipes proposed by the canned foods committee for settling the foreign exchange situation. "It is obvious," continues the statement, "that this situation cannot be remedied until we buy more goods abroad and trade is more evenly balanced. The canning industry is alive to the fact that, in a general way, this country will not regain nor develop foreign trade unless it is prepared to buy as well as sell. Just as our merchant marine will be seriously handicapped by reason of its inability to get return cargoes from foreign shores, so our exchange rates will restrict trade unless we buy as well as sell. In a general way, the canning industry is willing to yield its proportion and take its chances with the admission of foreign canned foods. We ask fair and proper consideration of the matter to the end that mutual benefits may be derived. The industry has not asked for high and prohibitive tariffs, and hopes that the rates to be

put into effect may be used in future negotiations for commercial treaties, whereby foreign markets for our products may be developed.

"Our Government has never had a foreign trade policy. The lack of it leads to misunderstanding and hostility among our neighbors. Commerce may be and should be the forerunner of peace and civilization. With a consistent well-considered foreign policy adopted by our Government, our foreign trade will tend to insure peace and prosperity throughout the world, but we respectfully submit that if we continue to drift with no foreign trade policy we shall invite controversies abroad and remain in idleness and discontent at home."

The canned foods committee is composed of the following members: C. H. Bentley, California Packing Corporation, San Francisco, chairman; R. S. Shriver, B. F. Shriver Company, Westminster, Md.; E. S. Thorne, Geneva Preserving Company, Geneva, N. Y.; L. A. Sears, Warrensburg Canning Company, Warrensburg, Ill., and E. G. McDougall, Libby, McNeill & Libby, Chicago.

### Mays Food Products Company Locates in Louisville

The Mays Food Products Company, New Orleans, canners, has taken over the site of the former Louisville Conserve Company, Louisville, destroyed by fire last July. Work will soon be started on a \$25,000 brick building. Canning operations will be begun in the spring.

Leonard M. Mays, president of the New Orleans company, announced that it intends to make Louisville its headquarters within the next three years. The Mays Company has taken over all the preferred stock of the old company, giving first mortgage gold notes on a basis of 33 1-3 per cent and common stock on the same valuation, according to William Greenwein, treasurer of the old company. There are approximately 415 stockholders in the conserve company. C. H. Cook will be manager of the new plant. The company will can vegetables and berries produced in the local territory.

#### R. L. Dollings Company Purchases Plant

The R. L. Dollings Company, Columbus, Ohio, has purchased a \$700,000 canning plant at Franklinton, Ga., completed in 1920 by the R. F. Willingham Corporation, which instituted bankruptcy proceedings in August, 1920. The deal was closed by Jesse B. Hart, trustee, and Dwight Harrison, Columbus, vice-president and general counsel for the Dollings concern; John R. Wilbans, Columbus, consulting engineer; Charles F. Ritter, Morrill, Ohio, and D. H. Kirwan, Lima, president of the Florida Industries Company. The Buckeye group promised the Macon Chamber of Commerce to put the plant in operation immediately, increasing the daily capacity from 50,000 cans to 150,000 cans and to double the original force of 500 workers. The plant was intended to absorb the overflow production of Georgia peaches. The plant proper covers about 300 acres.

#### Alabama Shrimp Canning Company Starts Operations

The Alabama Shrimp Canning Company, which has been closed down for a month for general repairs, has started operations at Coden, Ala. The company has been putting off the resumption of operations pending the action of the legislature on the shrimp bill, and with the passage of the measure protecting Alabama shrimp, full operations will be resumed.



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Biochemical Dept., Columbia University

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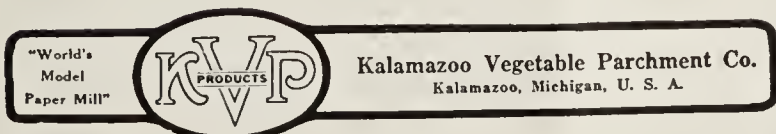
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# Recent Patents

The following patents of interest to readers of The American Food Journal were issued recently from the United States Patent Office. Copies of these may be obtained from R. E. Burnham, patent and trademark attorney, Continental Trust Building, Washington, D. C., at the rate of 20 cents each. The number of patent and name of inventor should be stated when ordering.

1,390,268. Combined fruit washer and scalding. William A. Beckett, Kingsville, Ontario, Canada.

1,390,308. Apparatus for pasteurizing whey. David E. Norleen, Abbotsford, Wis.

1,390,689. Food product containing hydrogenated oil. Carleton Ellis, Montclair, N. J.

1,390,690. Edible fat and process of making same. Carleton Ellis, Montclair, N. J.

1,390,804. Cherry pitting machine. Charles H. Marshall, Omaha, Neb., assignor to Marshall Mfg. Co., same place.

1,391,065. Food products made from corn and method of manufacturing the same. Adolph W. H. Lenders, Cedar Rapids, Ia., assignor to Penick & Ford.

1,391,160. Food product and process for making the same. Frederick C. Atkinson, Indianapolis, Ind., assignor to American Hominy Co., same place.

1,391,161. Food product and process of preparing. Frederick C. Atkinson, Indianapolis, Ind., assignor to American Hominy Co., same place.

1,391,561. Food product obtained from brewers' yeast. John C. Miller, Covington, Ky., assignor to Evaporating and Drying Machinery Co., Cincinnati, O.

1,391,562. Food product of yeast. John C. Miller, Covington, Ky., assignor to Evaporating and Drying Machinery Co., Cincinnati, Ohio.

1,391,642. Concentrated buttermilk. Irving S. Merrell, Syracuse, N. Y., assignor to Merrell-Soule Co., same place.

1,391,696. Cereal and process of making the same. George H. Saunders, Akron, O.

1,391,914. Chocolate and like coating machine. Asbjorn Sonsthagen, Essex, England.

1,391,918. Candy and method of producing. Livingston A. Thompson, Waukesha, Wis.

1,391,953. Method of treating canned foods. Oswald H. Hansen, Port Washington, Wis.

1,391,965. Process of testing milk and milk products. Julius J. Mojonner, Oak Park, Ill., assignor to Mojonner Bros. Co., Chicago, Ill.

1,392,253. Prepared fish eggs. Ray Gamble and Egbert J. Sliter, Tacoma, Wash.

1,392,683. Machine for wrapping sweetmeats and the like. Henry Hackett, Arthur Smith and Christopher Southall, Birmingham, England.

1,392,863. Candy pressing machine. Charles Webke, New York, N. Y.

1,393,045. Process for producing soluble concentrated coffee. John W. Scott, Englewood, N. J., assignor to Arbuckle Bros., New York.

1,393,144. Machine and method for making candy. William B. Laskey, Marblehead, Mass.

1,393,282. Preservative for milk. George Grindrod, Kent, Wash., assignor to Carnation Milk Products Co., Seattle, Wash.

1,393,287. Apparatus for cap stemming raisins. Thomas B. Hunter, San Francisco, Cal.

1,393,401. (Candy) coating and forming machine. Ira Shafer and Charles A. Small, San Diego, Cal.

1,393,422. Process for the manufacture of grape and other fruit juices. Russell W. Berridge, Detroit, Mich.

# Western Railroads and Steamships Publish New Freight Tariffs

The freight traffic department of the Southern Pacific Lines recently made public the list containing proposed reductions in rates approved by the Western lines for publication in the "Transcontinental Freight Bureau Tariffs." The effective date of these rates cannot be given at the present time, it was stated. The underlying idea in these reductions, several of which are of interest to the food trades, is to bring back to the transcontinental railroads some of the freight traffic which has been lost through competition by steamers plying between Pacific and Atlantic ports via the Panama Canal.

The tariffs which are affected by the changes recorded below are Import Tariff 30-H, Export Tariff 29-I, Transcontinental Westbound Tariff 1-T and Transcontinental Eastbound Tariff 2-P. In the quotations all rates to New York and Chicago or from these points, include New York and Chicago, respectively. In many instances, it is pointed out, the rates also apply to other groups, but these have not been given, for the sake of brevity. Also, in condensing the rates, certain quotations may be ambiguous. The freight traffic department of the Southern Pacific announced its willingness to answer all questions by interested parties from full data in its possession.

The proposed changes in rates have already received the approval of the railroads operating in the Western section of the country, but will not be effective until lawfully published; effective date cannot be given at this time.

The proposed changes affecting the food industries follow:

## Westbound Rates to Pacific Coast Points for Export

Gelatine, C. L.—C. L. rate of \$1.50 per 100 pounds, to New York and Chicago, C. L., minimum weight, 40,000 pounds.

## Westbound Rates to Pacific Coast Points

Syrups, glucose, glucose products and molasses, C. L.—Rate from New York, \$1.59. From Chicago, \$1.30.

Green coffee, C. L.—New York to Pacific Coast terminals, all rail routes, 80 cents per 100 pounds., C. L. minimum weight, 80,000 pounds.

## Eastbound Rates from Pacific Coast Points

Honeycomb and strained honey, C. L.—To New York and Chicago, \$2.75 per 100 pounds.

Pickled herring, C. L.—To New York, 95 cents per 100 pounds. To Group "C" points, minimum C. L. weight, 60,000 pounds.

Coffee, roasted or ground, C. L.—Tariff 3-O, rate of \$1.88 per 100 pounds, to Group 1 points.

Walnuts and almonds, C. L.—\$1.75 per 100 pounds, minimum C. L. weight, 30,000 pounds. Item 1040-C, Tariff 3-O.

Hops, C. L.—Rate of \$2.50 per 100 pounds to New York and Chicago.

Meats, cured and frozen, C. L.—Rate in Tariff 2-P and 3-O reduced to \$2 per 100 pounds.

## For Export

Fruit and vegetable waste, C. L.—New rate, 90 cents per 100 pounds.

## Steamship Reductions

A reduction in the freight rates on canned and dried fruit from the Pacific Coast to points in Europe has been announced by three San Francisco steamship companies. The firms concurring in the freight slashes were the Williams, Dimond & Company, Holland-American Line and Balfour, Guthrie & Company. The new tariff on fruit shipments becomes effective at once. It calls for a rate of 75 cents a hundred on canned goods, formerly quoted at 90 cents, a rate of \$1 on dried fruit in boxes and a rate of 70 cents on dried fruit in bags. The rates on the last two named shipments were formerly quoted at \$1.15 and 85 cents a hundred, respectively. The rate on fruit kernels was cut from \$1.15 to \$1 a hundred.

## Prune Contracts Valid, Says U. S. Court

In a decision handed down recently, United States Judge Julian Mack, sitting in New York, has dismissed the demurrer filed by Glanzer Bros. in the suit brought against them by the California Prune and Apricot Growers, Inc., for collection of prune contracts of last year, which were repudiated. The next move, unless an appeal is taken by the defendants, will be the trial of the case.

This decision, it was stated, would affect over \$750,000 prune contracts which were repudiated at the same time as the defendants' carloads.

A statement issued in New York shortly after the decision by the California Prune and Apricot Growers, Inc., through Butler & Sergeant, local representatives, says:

"The first ruling in the New York courts in suits against buyers who attempted to cancel contracts with the California Prune and Apricot Growers, Inc., last year was handed down yesterday by United States Judge Julian Mack. The judge, in a written decision, unqualifiedly affirmed the validity of the association's opening price contracts as they are pleaded in the complaints filed against these buyers.

**Prune Contracts Complete and Binding**

"The decision was rendered on demurrer filed by Glanzer Bros. of this city. It was argued to the court by attorneys for the defendants that the opening price contract was uncertain and lacked mutuality. Judge Mack stated that since it appeared that notice of the opening prices were given to the buyers and they assented, the contract was complete, definite and binding.

The judge, in a written decision, unqualifiedly affirmed the validity of the association's opening price contracts as they are pleaded in the complaints filed against these buyers.

Weight From New York From Chicago Pounds Present Proposed Present Proposed

Canned goods ..... 60,000 \$1.83½ \$1.15 \$1.50 \$1.15

Baking powder, etc. .... 40,000 2.25½ 1.50 1.92 1.50

Glass and glassware, in crates, viz.:

Glass, rough rolled, etc. .... 50,000 2.66½ 1.50 2.33½ 1.50

Window glass ..... 50,000 2.08½ 1.30 1.75½ 1.30

Packing house products ..... 30,000 2.66½ 1.60 2.33½ 1.60

Starch ..... 40,000 2.00 .... 1.66½ 1.45

By Interstate Commerce Commission

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Starch ..... 40,000 2.00 .... 1.66½ 1.45

By Interstate Commerce Commission





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# PRACTICAL BOOKS ON FOOD SUBJECTS

Any of the following books may be ordered from THE AMERICAN FOOD JOURNAL:

**Principles of Nutrition**—W. H. Jordan, Director New York Agricultural Experiment Station.

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## THE AMERICAN FOOD JOURNAL

Floral Park, New York

EXECUTIVE AND EDITORIAL OFFICES

25 East Twenty-Sixth Street

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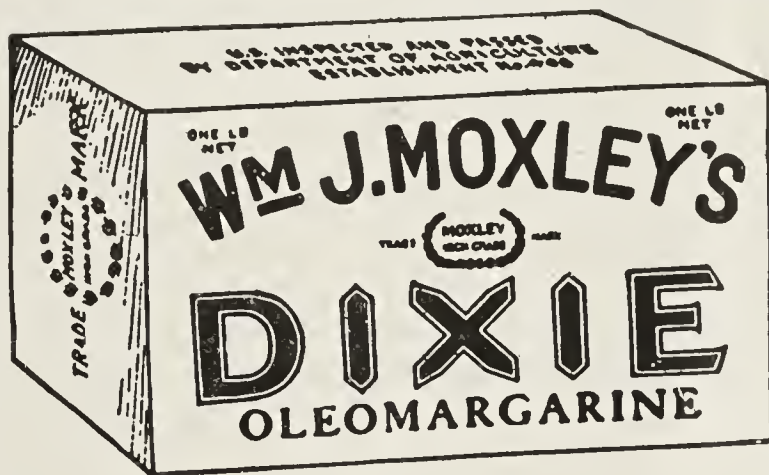
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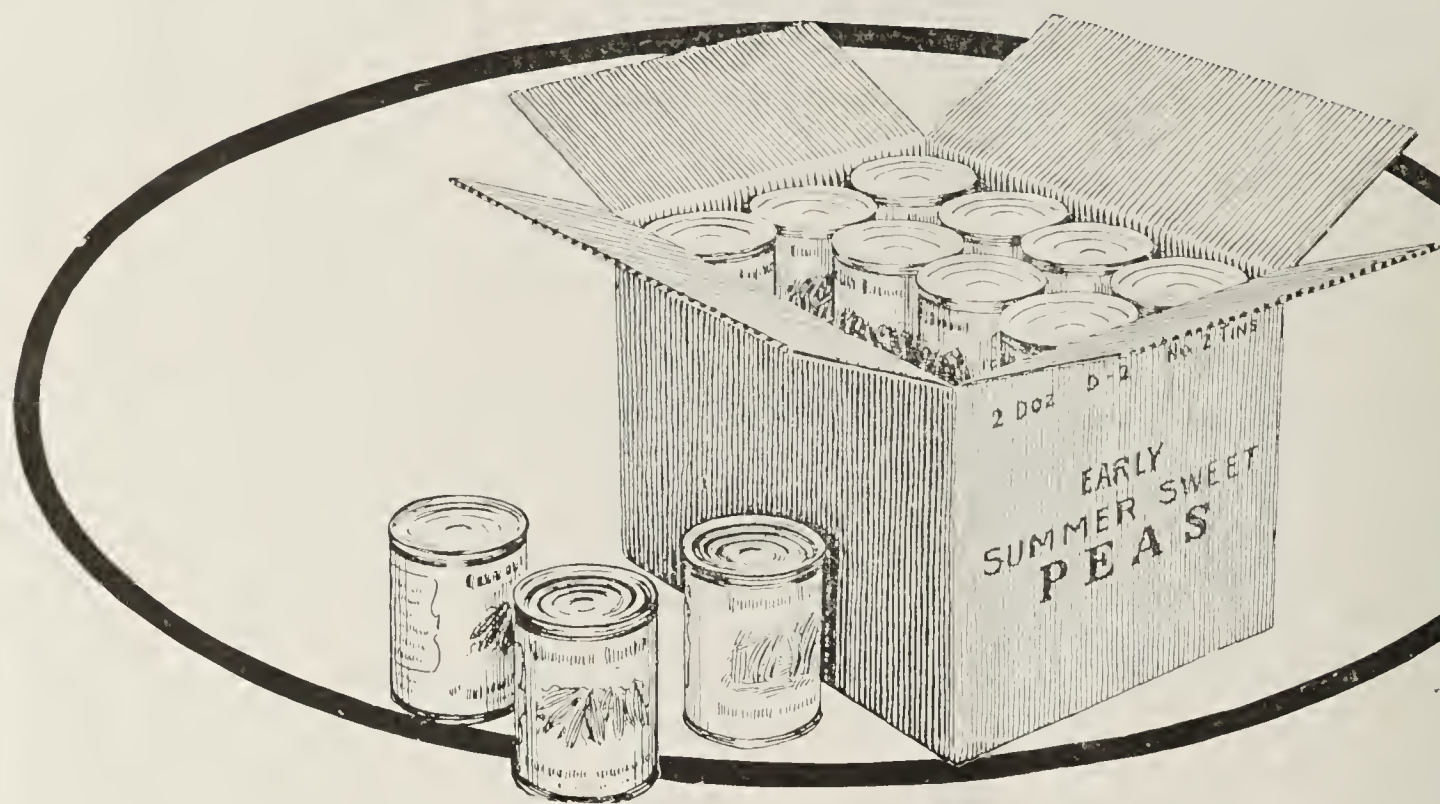
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# The American Food Journal

The National Magazine of the Food Trades



DECEMBER  
1921

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*An Interview with*

**Dr. Casimir Funk**

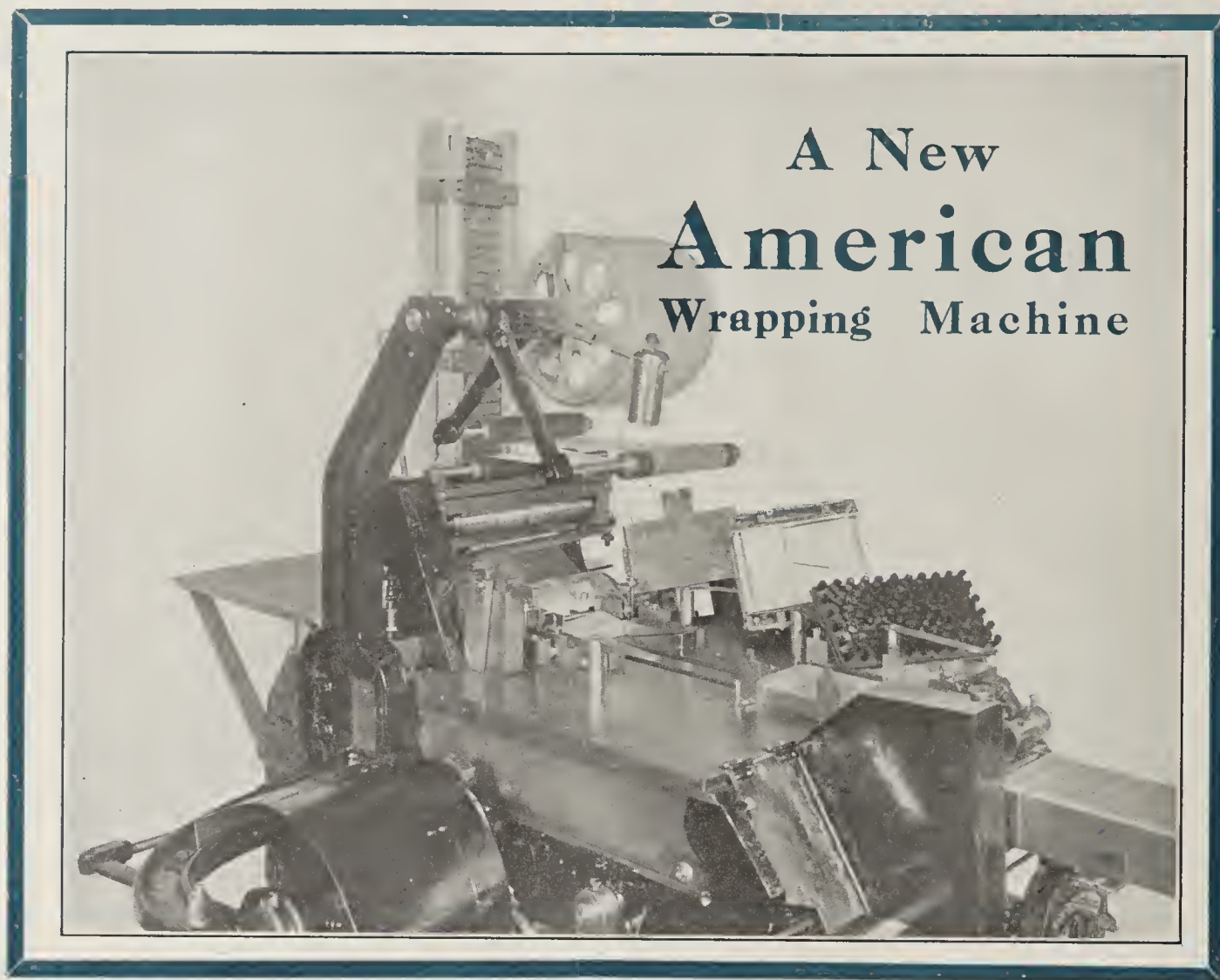
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Dr. Funk







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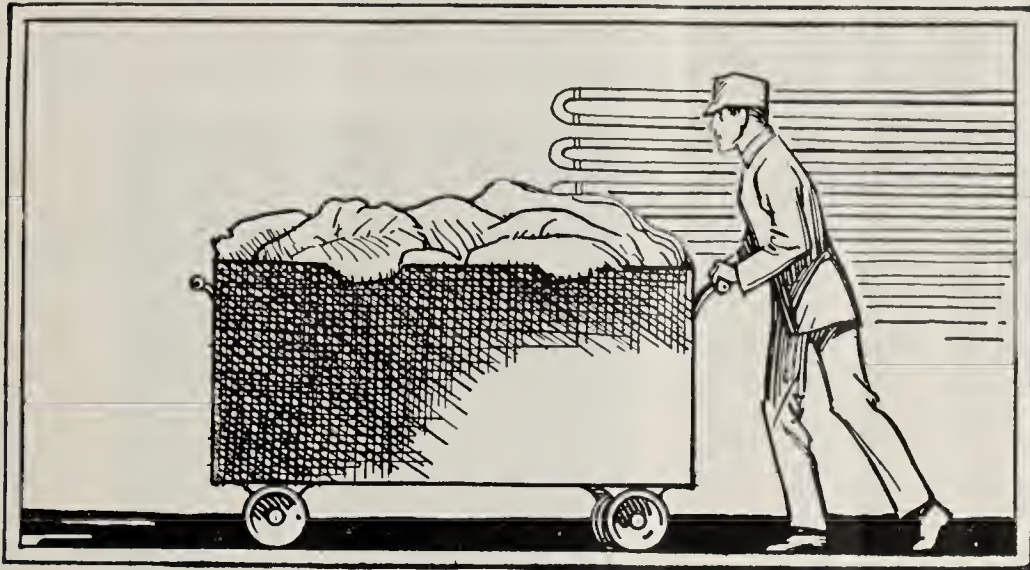
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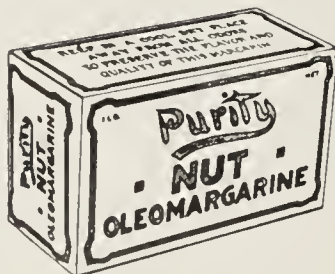
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# The American Food Journal

The National Magazine of the Food Trades

Established in 1906

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J. T. Emery, President

## The Editor's Column

### LIVE DISCUSSIONS

Professor Prescott's recent address before the National Coffee Roasters' Association on his investigations in coffee-making (published in the November issue) has already aroused considerable interest in the coffee and dietetic world. The letters on this subject appearing in the current number give some additional views on the matter. Before closing its columns to this important subject, however, THE AMERICAN FOOD JOURNAL cannot too strongly urge its readers to express further opinions on this matter.

Dr. Casimir Funk's interesting discussion on vitamins, also in the present number, is another needed contribution to an important subject that should stimulate professional opinion and cause further discussion.

### A READER'S PAPER

All of which is a rather long way of saying that THE AMERICAN FOOD JOURNAL is primarily a reader's paper. Widespread popular discussion is certain oft-times to clear the atmosphere and provide honorable hearing for views that otherwise would have remained "unhonored and unsung"—and sometimes these are the most significant of all!

### CONGRATULATORY

No month would be complete without the usual quota of letters commending the progress of THE AMERICAN FOOD JOURNAL. The following two are plucked at random from the month's mail:

"I like THE AMERICAN FOOD JOURNAL very much and think that every dietitian should have it."—Rose Straka, Chief Dietitian, Presbyterian Hospital, Chicago, Ill.

"We find THE AMERICAN FOOD JOURNAL very useful in our work and its articles very interesting and up-to-date."—Professor William V. Cruess, Head of Fruits Products Laboratory, University of California, Berkeley, Cal.

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# The American Food Journal

The National Magazine of the Food Trades

Vol. XVI

DECEMBER, 1921

No. 12

## An Interview With Dr. Casimir Funk on Vitamines

### Discoverer of These Food Factors Comments on Present Knowledge of Subject and Its Applicability to Dietetic Problems

Editor's Note.—The contributions of Dr. Funk, discoverer of the theory of vitamins, to the scientific world have been most important. Before he came to this country, his experimental work from various laboratories in Europe was well known through the foreign scientific journals. His investigations on the relation of polished rice and beri-beri date from 1910. For several years now, Dr. Funk has continued his research in this country in his special field and publishes his results in our scientific journals.

By PAUL F. STACY

SCIENTISTS, pediatricians, agricultural and biological chemists and home economic experts of national repute were gathered in Madison, Wisconsin, in November on the occasion of a Supreme Court hearing in which the constitutionality of a law that prohibits the manufacture and sale of skimmed milk compounds in Wisconsin was contested by the Carnation Milk Products Company and the Hebe Company.

Between sessions of the court, the hotel was the scene of many interesting discussions among these men and women who stand among the foremost in the study of food problems. One of these discussions took place in a small group which included Dr. Casimir Funk, the eminent scientist, who, ten years ago, discovered the theory of vitamins and who actually gave these food properties the name "vitamine."

Many of Dr. Funk's comments were so interesting that the writer asked his permission to incorporate them in an interview to be published by The American Food Journal.

#### Forecasts Detection of a Fourth Vitamine

In the course of this discussion, Dr. Funk forecasted the detection of a fourth vitamine. Food students know that there are three vitamins present in various foods, namely, A B and C, the anti-neurotic, the fat-soluble and the anti-scorbutic vitamins. Because of the fact that it has proved so far impossible to isolate a vitamine and thereby learn something of its chemical composition, the establishment of the presence of these three constituents and of their functions has been made most difficult because of the careful methods that scientists have been compelled to use before sound conclusions could be reached with safety.

Dr. Funk chose not to reveal anything as to the circumstances surrounding detection of the fourth vitamine nor as to its probable significance. Somebody had raised a question as to whether or not there are other food constituents of which we are as ignorant today as we were of the presence of vitamins before Dr. Funk's discovery.

"There are very persistent rumors that the existence of a fourth vitamine has been detected," he stated. "We know of the existence of three. The list is by no means exhausted as yet."

#### Should Not Make a Fad of Vitamines

Dr. Funk expressed the opinion that the American public would do well to curb its tendency towards making a fad out of the practical application of vitamins to daily routine.

"Science is very much in the dark yet as to the composition and functions of vitamins," he said. "The combined research that has taught us all that we do know about the subject is of tremendous importance. But it is not detracting from the valuable place that vitamins hold in the list of food elements to say that we are just beginning to understand them a little.

"Reputable scientists do not countenance the efforts that are being made to deceive the public into believing that the time has come when it can be said satisfactorily that such and such a result will follow the practice of taking certain proprietary vitamine preparations.

"To put it briefly, the people who are promoting such preparations do not know what they are talking about. And they certainly are leading the public into deception. If their claims for these products could be substantiated, science would greet them with open arms. There are several hundred scientists experimenting, but, as yet, vitamins have not been isolated, much less concentrated.

"Besides, vitamins so far have proved of value only when there have been cases of a very distinct vitamine deficiency. When the diet is complete, we do not know yet whether an additional supply of vitamins is needed or even advisable. No one has established the quantity of vitamins necessary for maintenance of the average healthy person.

"If there is any message from scientific laboratories to the American public, it is this: Look forward with confidence to a day when science shall ferret from Nature her valuable secrets as to vitamins. Meanwhile, do not become over-excited about them nor enthusiastic over extravagant claims that cannot have foundation in actual scientific experience.

#### Nothing Mysterious About Vitamins

"There is nothing mysterious about vitamins. They are just food constituents that should be in our diet, just as

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other food properties should be found there, too. Like art, science is long and much more painstaking. Time is fleeting. But it will not be long, as time goes, before science will have definitely found facts about vitamins that now are unknown."

Dr. Funk was asked whether the day would ever come when science would have so controlled basic food elements that a housewife could be independent of grocer and market-man through her ability to go to her own laboratory and, by mixing the contents of this vial with two or three of those tablets dissolved in such and such a solution, produce a lamb chop or its equivalent in food value; an egg, a loaf of bread or a fish.

Scientific development to such a degree cannot be said to be impossible outright, according to Dr. Funk, but achievement of so radical ideas is very far from accomplished today.

"I do not know what use, practically or otherwise, will be made of isolated vitamins when we have succeeded in separating them," Dr. Funk said. "I would not even want to venture a guess. No one can know. I confidently predict that the time will come eventually when we shall succeed in such isolation. But no one has succeeded in doing it yet.

"What would be the use of preparing all our food artificially," he asked, "so long as Nature is producing her own foods in sufficient abundance to supply our increasing population? It would be folly even to think of turning ourselves into domestic manufacturers and consumers of self-made foods so long as Nature gives us enough.

#### Compounded Foods Have a Place in Diet

"I do not mean to imply that there are not today prepared or compounded foods that do not deserve a real place in our diet. They earn their place, first, because the supply of some natural foods does tend to shrink and, if there is to be enough to go around within the purchase reach of the general public, an additional source of food, in these instances, must be found. Second, such foods have a right to existence because products which previously were wasted extravagantly are now being utilized to the betterment of the race. Of course, the public should be educated as to the actual food value of such products in relation to natural foods. If the time ever came when our daily diet consisted of too great a proportion of such compounded foods, there would be danger. Nobody contends that there are not deficiencies in such foods, not even the manufacturers. There are deficiencies in natural foods, too, for that matter. There is no one perfect food, embracing all the necessary nutritive elements. But the deficiencies in prepared foods is naturally greater. And if we ever eat too large a proportion of such foods, the aggregate of the deficiencies in all the foods will constitute a real danger. But that, too, is a remote possibility."

The conversation turned to the subject of milk, and the discussion brought decided views from Dr. Funk as to the agitation that has been made over the desirability of whole milk as infant food, the presence in milk of the fat-soluble A vitamin and the claims that have been made for this vitamin as a specific growth-producing element.

#### Vitamins in Milk Exaggerated

"The content of vitamins in milk has been very greatly exaggerated," he said. "There are other foods that are far richer in vitamin content than is milk. We are by no means dependent upon milk alone for our supply of vitamins.

"It is incorrect, in fact, a very great misrepresentation to the public to call the fat-soluble A vitamin the 'growth' vitamin. Vitamin A is not the gross element needed for growth. The absence of an amino acid would retard growth, and it would be just as reasonable to call amino acids 'growth' elements as it is to credit vitamin A with this function. Vitamin A must be supplemented with all the recognized food constituents."

Dr. Funk broke away from the subject of milk to explain in some detail his firm belief that vitamin B is of

far more universal significance than vitamin A, in the course of which he said:

"It is our experience that an eye disease has followed a deficiency in vitamin A content. But a pathological investigation of the tissues of the eye has not given any clue as to the relationship of the vitamin deficiency to the symptoms observed."

#### Cow's Milk Not a Perfect Food

Returning to the subject of milk, he continued:

"Cow's whole milk, contrary to popular opinion, is not the ideal or perfect food for infants. It is too rich. It must be modified before the sensitive organs of the child can assimilate it. There is only one perfect food for infants and that is mother's milk. It differs very much from cow's milk. Science must make cow's milk approximate mother's milk before it is proper for the cow product to be given children in certain conditions.

"The vitamin content in both mother's and cow's milk is essential for infants. But vitamins are not any magical possession of either milk. They exist only because the mother or the cow has assimilated them from the food they have eaten prior to production of the milk."

Dr. Funk appeared as a witness for the plaintiff milk companies in the Wisconsin case. His testimony included a statement as to the fact that the fat soluble A content in whole milk is too small in itself to protect against rickets and stated that cases are known where rickets have developed when the subject was being given whole milk. He also testified that efforts to cure rickets with butter fat alone have proved unsuccessful.

His opinion of skimmed milk compounds was that they are wholesome, nutritious food products, just as apples, white bread or meat are when they are not made an exclusive diet. Such compounds do not contain elements deleterious to health, he testified, so long as the public knows their nutritive value and how to supplement them.

#### Government Inspections of Peanuts in Eight Cities

Government inspections of shelled Spanish peanuts may now be ordered at Boston, Chicago, Minneapolis, Kansas City, Cincinnati, Philadelphia, New York, and St. Louis, where preparations have been made for giving the service through the Food Products Inspection Service of the United States Department of Agriculture. Upon request from any interested party, including the shipper, the transportation company or the receiver, a trained Government inspector will inspect the shipment before it is unloaded from the car.

A number of samples are taken from different bags to enable the inspector to get a representative assortment of all the peanuts in the car. This composite sample is then screened with hand screens in the inspector's office and a certificate prepared stating in detail the percentages of split, damaged, moldy, and other off-grade peanuts, and whether the lot comes within the provisions of the tentative United States grade specifications. The results will be reported by wire if requested, otherwise by mail. These certificates are accepted in United States courts as prima facie evidence of the condition of the goods at the time of inspection.

#### Pennsylvania Pure Food Bureau Busy During November

The Bureau of Foods, Pennsylvania Department of Agriculture was kept unusually busy during November, 124 prosecutions for violations of the pure food and non-alcoholic drink laws of the state having been ordered during that period.

Thirty-five arrests were ordered during the month for the sale of stale eggs masquerading as fresh, while twenty-eight prosecutions were ordered for violations of the butter and cream act.

The other prosecutions brought covered a large range of offenses, food adulteration comprising the greatest number.

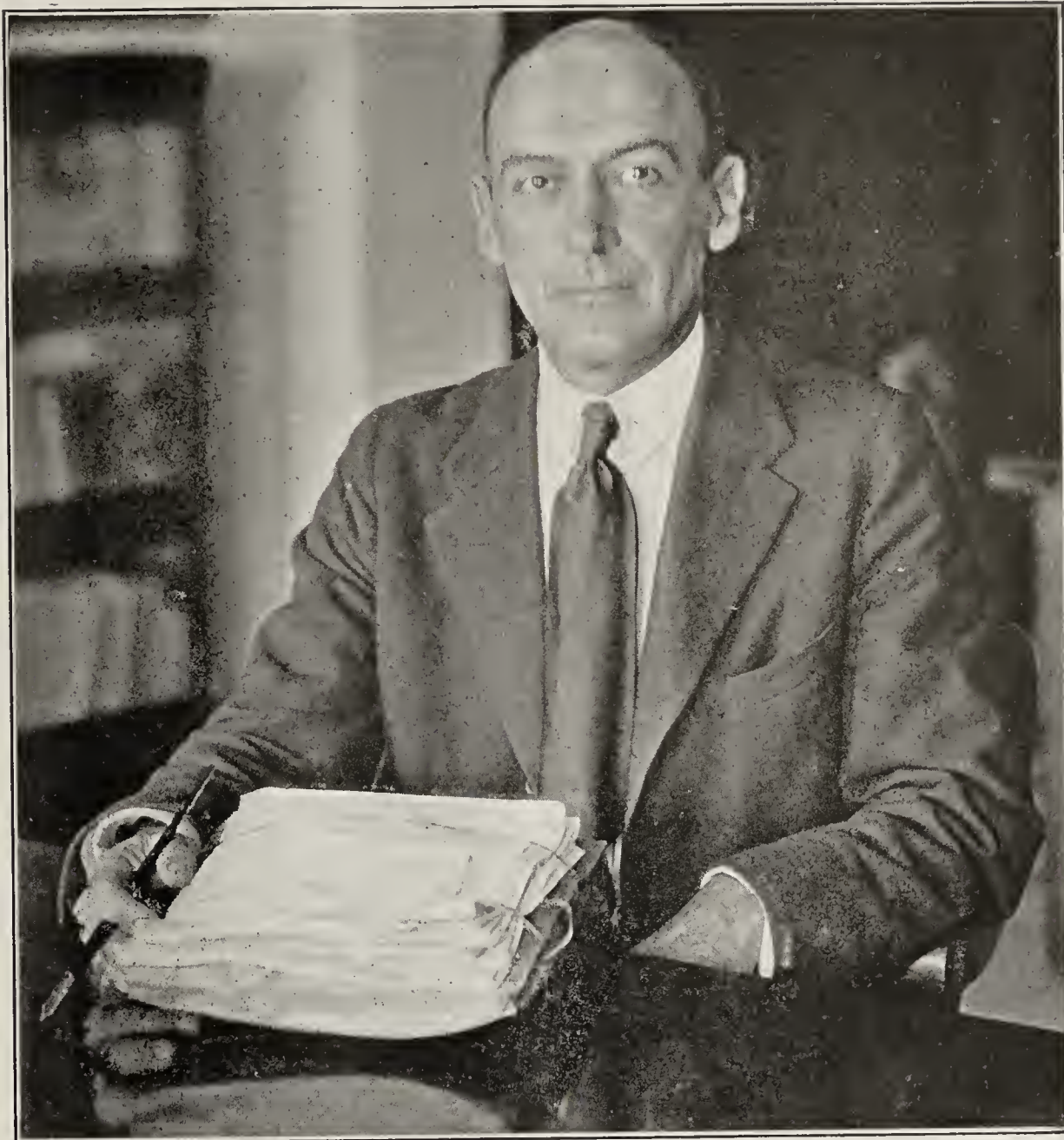


# What the Bureau of Chemistry is Doing For Food Manufacturers

Scientific Research Brings Many New Products Into Utilization—Enforcement of Food Laws Establishes Consumers' Confidence

By W. G. CAMPBELL\*

Acting Chief of the Bureau of Chemistry, U. S. Department of Agriculture



IT is the aim of the Bureau of Chemistry of the Department of Agriculture, in harmony with the general policy of the Administration, to make every dollar count to the utmost. Our concern is to see that for every dollar expended, whether for salaries or for operating expenses, we give to the country more than a dollar's worth of service, and that kind of service which brings an adequate return to the people who pay the cost. Anticipating the action of the Government in that respect, we have been operating on a budget system for a period of approximately five years.

While the work of the bureau in the enforcement of the Federal Food and Drugs Act is generally known, some of the other phases of our work, based upon the application of the science of chemistry to the utilization of agricultural products and to the development of new industries—that is, our revenue producing work—is worthy of special note.

One of the big problems in agriculture is to find an outlet

\*From address delivered before thirteenth annual convention of American Specialty Manufacturers' Association, November 17.

for cull and surplus crops, especially perishable crops. The Bureau of Chemistry is devoting much attention to the development of new processes for the utilization of fruits and vegetables. The work which the Bureau is doing on cull oranges and lemons grown in California and Florida may be mentioned as an illustration of the results obtained. Fruit which is too small or too large, unsightly or misshapen, cannot be sold profitably for food. Some fruit is not fit for shipment because of minor defects such as small bruises or punctures from thorns or gravel or rough boxes, since such defects become points of infection for bacterial and fungus growths which cause decay. The amount of waste fruit averages from year to year about 3 per cent of the total crop. The Bureau of Chemistry organized a laboratory in Los Angeles, California, in 1914, to investigate the possibility of adapting and of improving existing methods for the utilization of waste lemons, to develop new methods and to make, if possible, new products from the waste lemons, oranges and grapefruit.

There were one or two small and struggling by-product



companies in California when these investigations were begun. These concerns were making no appreciable inroad into the enormous supply of cull fruit available. Since the establishment of our experimental laboratory in Los Angeles, the by-products industry has developed rapidly. Now there are four staple concerns manufacturing lemon by-products. The plants of these concerns have a capacity of 50,000 pounds of lemon oil, 500,000 pounds of citrate of lime and over 1,500,000 pounds of citric acid. Twenty concerns are producing orange by-products to the extent of 6,000,000 pounds each year. These orange by-products include marmalade, marmalade stock, jellies, orange juice and candied peel. Improved methods for the manufacture of orange vinegar have been developed by the experimental work. Methods for the production from cull grapefruit of candied peel and juices of excellent quality have been devised. The existing methods for the manufacturer of citrate of lime and of citric acid have been improved and adapted to California conditions. This work has created an outlet for practically all of the cull and surplus oranges and lemons, making it possible for the growers to dispose of them at a good price and has developed a new American industry.

In connection with the development of the bureau's utilization program, attention has been given to the preservation of fruits and vegetables by drying, in the belief that this method is destined some day to play an important role in the country's food preserving industry. Improvements have been made in the processes of dehydration, with the result that the product more nearly resembles fresh fruits or vegetables than is the case when the old-fashioned drying process is used.

#### Room for Further Research in Dehydration

The dehydration industry requires much research work before uniformly good products will be found universally on the market. Each fruit and vegetable presents specific problems which must be studied to find the answers to such questions as: Which is the best variety for dehydration purposes? At what temperature and with air of what humidity should it be dried? What preparatory treatment, such as blanching, should it be given? To what degree should its moisture content be reduced, and how should it be packed, handled and stored? Studies on the best designs of plants and on the costs of operation are also being conducted. Studies of the various dryers being used have been made with a view to determining which is the most efficient for each crop. The majority of the drying plants are of small capacity, and the owners or managers are not always adept in their operation, nor can they afford to employ expert help. The bureau representatives have been able to assist them in many ways. As a result of specific, although rather unusual, authority conferred upon the bureau in the appropriation item, we are endeavoring with the industry to create a market—a thing that is recognized as of paramount importance to the success of this industry.

An important new industry for the South and a market for the waste of one of its most important farm products is being developed in an experimental plant at Fitzgerald, Georgia, for the manufacture of sweet potato sirup. The process for the manufacture of sirup from sweet potatoes has already been worked out on a laboratory scale. The sirup is rich in sugar, of a fine brown color and of excellent palatability. It has been found valuable for baking, candy making and table purposes. While the process is a success from a laboratory standpoint, the Bureau of Chemistry is not in a position to recommend it to manufacturers until questions of cost of commercial production and the market value of the product compared with cane, corn and other sirups are determined. The possibilities of the sweet potato sirup industry lie largely in the utilization and marketing of a part of the crop which heretofore has not been practicable, either for storage or shipment to northern markets. A large percentage of the crop is lost annually. Potatoes that are too large or too small for table use or

for commercial canning are as useful for sirup making as perfect ones.

#### Utilization of Corn Cobs

As an illustration of other work the bureau is doing for the utilization of waste agricultural products may be mentioned the development of the process for the utilization of corn cobs, which have heretofore been practically a waste product. About 20,000,000 tons of corn cobs are produced annually in the United States. At present, some cobs are used for industrial and household fuel, for which purpose they have about one-third the value of coal. More often they are burned to get rid of them or they are dumped into rivers or swamps.

The chemists of the bureau have now worked out processes for utilizing corn cobs and obtaining from them many valuable substances. It is estimated that there can be obtained from the use of 100 tons of corn cobs as a base 45 tons of a first-class adhesive, 30 tons of a second-class adhesive, both of which can be used in the manufacture of paper boxes and the like, 36 tons of cellulose which can be used for the manufacture of paper and many other products, 3 tons of acetate of lime and 1½ tons of furfural. All of these products are used in the various technical arts and can be marketed at profitable prices. Larger quantities of furfural can be obtained by converting part of the adhesive into this product. The 45 tons of the first-class adhesive will make approximately 8 tons of furfural. One commercial concern is now preparing to erect a plant for the purpose of producing furfural from corn cobs.

#### Technological Work Aids Industrial Development

In addition to the work on the utilization of agricultural products, the Bureau of Chemistry has under way many technological projects which are aimed to aid various industries. One of the most successful and beneficial efforts which the bureau has made in this direction resulted in the development of a method for the manufacture of cane sirup by which the serious commercial difficulties due to fermentation and crystallization were obviated. This work is now passing from the experimental stage, and has reached a point where the method was employed successfully by sirup manufacturers in the South last year. The force responsible for this particular development is now concentrating its efforts in an attempt to solve those technological difficulties which now prevent the most satisfactory yield of sugar from the cane and from the beet. While the bureau is not yet in a position to make public the results of this work, I may say that very satisfactory developments are attending the efforts of our chemists.

During the war, Congress made a small appropriation to the Bureau of Chemistry for investigations looking to the development of methods for the manufacture of dyes which at that time could not be obtained from Germany. A staff of specialists was employed and numerous processes for the manufacture of dyes and intermediates have been worked out. Some 16 patents have been obtained as a result of this work. These patents were taken out in the name of the department and are for the benefit of the public generally. One of these 16 processes alone has paid for the total cost of the investigations many times over. Phthalic anhydrid is one of the intermediates necessary in the manufacture of several different dyes. From it, as many as 300 different substances are made, including dyes, chemicals and drugs. Before the war, phthalic anhydrid could be obtained only from Germany. During the war it sold as high as \$7.50 a pound and sufficient quantities for the use of American manufacturers could not be obtained at any price. The specialists of the Bureau of Chemistry worked out an improved process for the manufacture of phthalic anhydrid which is believed to be a better and cheaper process than any so far developed in Germany. Large quantities of phthalic anhydrid are now being produced commercially in the United States for sale at as low as 45 cents per pound, and it is believed that eventually the price will be even lower. One American manufacturer,



since the war, has been selling phthalic anhydrid in Switzerland in direct competition with German manufacturers.

#### Only Fundamental Problems Considered

At this juncture I might say that the Bureau of Chemistry as a Government agency conceives that its technological undertakings should be circumscribed by consideration of those problems only which are fundamental in their character. Its service can be directed more properly to the solution of questions which are of basic importance to the industry as a whole, and which, because of their character, cannot or may not be handled satisfactorily by individual concerns. We do not believe it to be our function to consider matters which are incidental or individual in their kind.

The prevention of dust explosions is another line of work in which the Bureau of Chemistry has rendered valuable aid to the industries of this country. Plant dusts are highly explosive. When such dusts become mixed with air in certain definite proportions, all that is necessary to produce a violent explosion is for the dust to become ignited by contact with spark or flame. Violent and disastrous explosions have occurred in threshers, grain mills, elevators, starch factories and the like, resulting not only in great loss of property, but also in the extensive loss of life. As a result of the work of the Bureau of Chemistry looking towards the prevention of explosions in threshers, the number of such explosions in the Pacific Northwest has been reduced from more than 300, with a property loss of \$1,000,000, in 1914, to less than 60 with a property loss of about \$15,000, in 1920. Practically no explosions have occurred in threshers equipped with the safety devices worked out and recommended by the department.

The work on the prevention of explosions in flour mills and grain elevators has been equally successful. During a period of 20 months, from October, 1917, to May, 1919, when the prevention campaign in regard to dust explosions was active, no explosions occurred in plants where the precautionary methods recommended by the department had been adopted, while in 20 months previous, at least four disastrous explosions occurred, resulting in the loss of 24 lives, injuries to 36 others and property loss in excess of \$6,000,000. The specialists of the bureau also took charge of the dust explosion prevention work for the United States Grain Corporation. That corporation carried grain stocks averaging at all times \$100,000,000 in value, and at times as much as \$500,000,000 worth of stocks were carried. The insurance on this stock would have cost \$3,000,000. As a result of the protective work, the Grain Corporation lost during the year but \$25,000 from fire and explosions.

#### Rosin and Turpentine Research

Another line of work in which the Bureau of Chemistry is interested is that pertaining to the production and uses of rosin and turpentine. Improved methods for the production of both of these necessary materials have been worked out. Turpentine is produced in a large number of small stills scattered throughout the South Atlantic and Gulf States. Until the work was taken up by the Bureau of Chemistry, the industry was carried on largely by rule-of-thumb methods. No scientific investigations had been made to determine what the most efficient and economical methods for producing turpentine and rosin were. Methods have been devised on a laboratory scale which have since been applied rather generally throughout the industry, with the result that great improvement has been made in the production of high grade and more uniform turpentine and rosin, as well as of rosin suitable for specific uses. Our men go out to the stills and personally instruct the operators in the most economical and efficient methods.

The Bureau of Chemistry is also conducting on a small scale investigations for the improvement of methods for tanning leather. Tests have been devised for determining the relative wearing qualities of different leathers. It is believed that leathers better suited for specific purposes, such as harness making, soles for shoes, bookbinding and the like can be made through improved tanning methods.

It is the intention of the bureau to make a complete scientific study of tanning processes and tanning materials. It is believed that as a result of this work longer lasting leathers can be produced more efficiently and more economically.

#### Relation of Laboratory to Industry

It is important, however, not only to work out technological processes in the laboratory, but it is necessary that those processes be transferred from the laboratory to the industry. It is quite a different matter to make a process successful in the laboratory and to make it successful in the factory. It not infrequently happens that the expert chemist, the most efficient laboratory man, has neither the time, inclination nor special qualifications to transplant his laboratory process to the factory. In order to bridge over this gap, the Bureau of Chemistry has established an Office of Development manned by industrial engineers, whose function it is to take the processes worked out in the laboratory, adapt them to commercial conditions and assist in their utilization in industry.

#### Fundamental Food Research

As might be expected, an organization that is so intimately connected with the food industry as is the Bureau of Chemistry, must necessarily carry on much research work relating to foods. One of the most important researches of this character has been conducted in our protein laboratory on the chemical composition of the proteins in various food products and in waste agricultural products that might be used for food. The studies of the chemical composition of the proteins of various substances have yielded most interesting results that are of value in determining a better ration for stock and a more balanced diet for man and will probably lead to more extended utilization for feeding purposes of by-products or of articles not ordinarily used for this purpose. It has been found that a loaf made from wheat flour with a small admixture of peanut flour and salt forms a diet that is biologically complete, is properly utilized by animals and maintains a normal growth. Even small amounts of soy bean meal will give similar results. The proteins of various grains and other substances are being studied. Copra press cake has been shown to be a most valuable addition to corn feed. Corn lacks certain essential elements, and when supplemented with the substances containing them, its nutritive value is greatly increased.

The foregoing have been cited as illustrations of the activities of the bureau in a determination of the most economic utilization of agricultural materials or the independent investigational operations of the bureau supported either by the general agricultural investigational funds or by specific appropriation. It is understood, of course, that the outstanding single undertaking on the part of the bureau is that incident to the enforcement of the Food and Drugs Act. This work is designated as regulatory, in contradistinction to the operations which are exclusively scientific and investigational. It does not follow, however, that a cleavage of a clean-cut kind can be drawn between the research and the regulatory work.

#### How Food and Drugs Act is Enforced

The enactment of the Federal Food and Drugs Act was a movement of a decidedly progressive type. Both by its guaranties to the public and its effect upon the manufacturer, it was constructive. The necessary modification in manufacturing practices which it required offered alike to the Government and to the industry a field for research which had not theretofore been considered seriously. A certain portion of the funds made available for the enforcement of this law must of necessity be used for the support of the research activities of the bureau designed for the dual purpose of supplying to the administrative officials the information required to enforce the law effectively and fairly, and to assist manufacturers of food and drug products in making those changes in their practices which a compliance with the terms of the law require.

As an illustration, it is not a simple matter to decide the numerous questions which arise concerning the proper



marking of the contents of food in package form and especially to determine what tolerances and allowances should be permitted. As you know, the weight of some foods, because of their moisture content, varies considerably from time to time. To determine what is the average shrinkage of various food products as they progress through the channels of commerce from the factory to the consumer is a work that requires time and patience. We have recently been investigating the shrinkage that takes place in cheese. Extensive experiments were made under actual commercial conditions. Cheese were weighed in the factory just after being manufactured and at various intervals of time during storage. They were weighed just before being shipped and on arrival at their destinations varying in distance from 50 to 1,000 miles, again after they were placed in storage at the point of consumption, and at the time finally delivered to the retail store for sale to the consumer. As a result of a large number of experiments and the collection of numerous data, it is possible for the bureau to determine with a fair degree of accuracy what will be the average shrinkage in the shipment of cheese for definite distances under ordinary commercial conditions.

#### Proper Fill of Containers

Another investigation analogous to the net weight investigation is that to determine what is the proper fill of cans, that is, how much actual solid food material and how much brine or sirup should be in the various cans for the great variety of fruits and vegetables that are put up in that form. The bureau has conducted extensive investigations to determine, for instance, exactly what the weight of solid peas should be in the different sized cans which are used in the canning of this vegetable. As a result of this work, it is possible for the bureau to advise a canner exactly how much the drained weight of the peas in the cans should be.

I merely mention these as a few of the many investigations that are being conducted by the bureau in order to furnish us with the fundamental information which enables us equitably to enforce the provisions of the Food and Drugs Act. Still more extensive investigations are required in order to furnish data for the establishment of definitions and standards for the great variety of foods that are put upon the market.

The Supreme Court has said that the purpose of the Food and Drugs Act is primarily for the protection of the consumer. While keeping this in mind as the primary purpose of the law, we also fully realize that it can be made of immense benefit to the food industry itself. This benefit to the industry is manifested in two ways, first by establishing the confidence of the public in the wholesomeness and purity of the foods which are subject to the provisions of the law and thus aiding in the sale of such foods, and second, by preventing unfair competition within the industry by checking misbranding and adulteration.

#### Enlightened Interpretation of Foods and Drugs Act

Changing conditions require different methods to carry out fundamental policies. The task of enforcing the Food and Drugs Act immediately after its enactment was of a kind quite different from that involved in its enforcement today. An innovation such as the passage of a law to control commercial practices is followed by a period of adjustment. Through the period of this transitional stage infractions were frequent. Since the Act, though criminal in caste, is corrective rather than penal, there was required of the bureau in the beginning an effort to make the nature of its exactions known. Normal developments gradually reduced the scope of violations until eventually the ordinary case was one which came within a debatable zone.

This necessitated a new consideration based upon more extensive information concerning manufacturing practices and greater knowledge of the law as interpreted by appellate courts. This change in condition required a corresponding change in organization, the outstanding modification being a plan of decentralization, which created

three inspection districts with headquarters at New York, Chicago and San Francisco. Effective administration of an organization in which authority has been delegated is practicable only when there exists some plan by which unity in viewpoint is established and co-ordination in all phases of work in all branches guaranteed. Otherwise action will be dictated by opportunism with different subdivisions proceeding on varying subjects in individual and varying ways to conclusions inevitably unsatisfactory and perhaps contradictory.

#### Yearly Work Planned in Advance

To provide for systematic investigations, uniform procedure and sympathetic administration in every branch, the Bureau of Chemistry has adopted a project plan of work. This simply means that there has been determined prior to the beginning of the fiscal year an outline of regulatory work to be undertaken by every unit of the field force and contemplates that attention will be given to the individual topics of this project or schedule of work in every section of the country at the same time.

The success of this plan of control involves a proper understanding between the administrative officers of the field and those in Washington. This is brought about chiefly by the special or staff laboratories and offices of the bureau whose services are of a liaison character. The plan is thoroughly co-operative and contemplates a proper articulation of every agency whose work has any bearing on any one of the schedules. This makes possible an accurate inventory of existing conditions, commercial practices, and the need for correction either by announcement or by prosecution, all of which should be known in the determination of an administrative policy.

#### Co-operation With State and Municipal Officials

It is our purpose, however, to co-ordinate the work not only of the various units of the Bureau of Chemistry, but also that of the State and municipal officials in so far as co-ordination can be brought about through the voluntary co-operation of the officials concerned in the administration of food laws, whether Federal, state or municipal. I recently attended the annual convention of the Association of American Dairy, Food and Drug Officials at Miami, Fla., where we discussed this plan of co-operation, which, in my opinion, will go a long way toward bringing about uniformity in administrative action, in so far as the varying laws of the states will permit. Manufacturers of food specialties know the great expense and trouble which is sometimes caused by variations in state laws and by diversities in administrative action. With the question of securing more uniform laws we are not now directly concerned, but I believe that much can be accomplished in the matter of securing uniformity of interpretation and administration of food laws through more extensive co-operation, and it is not improbable that greater harmony in administrative action may eventually result in a greater degree of uniformity in Federal and state legislation regulating commerce in foods.

#### Foods to Use When Condition is Anemic

When the human system needs a tonic, in other words, a diet high in iron, to meet anemic conditions, the use of some of the following items of food is recommended by health and nutrition specialists of the University of Minnesota.

Breads: Boston brown, entire wheat, graham.

Cereals: Rolled oats, rolled wheat, cracked wheat, shredded wheat.

Vegetables: Spinach, lettuce, swiss chard, asparagus, dandelion, rhubarb, cabbage, brussels sprouts, string beans, celery radishes, cauliflower, dried beans, kohlrabi, eggplant, tomatoes, peas, potatoes, beets, carrots, squash, turnips, onions, pumpkins.

Fruits: Strawberries, raisins, cranberries, pineapples, blueberries, blackberries, prunes, figs, watermelon, dates.

Protein rich: Eggs, lean beef, fowl, fish, lamb, milk, buttermilk foods, almonds, hazelnuts.

Sugars: Molasses, maple syrup.



# More Varied Diet Needed for Rural Homes

## Food Control Officials' Task to Co-operate With Home Economics Demonstrators in Preventing Malnutrition in Country Districts

**Editor's Note**—Miss Helen Louise Johnson received her professional education at Wells College and Mrs. Rorers' Cooking School in Philadelphia, when cooking schools and the education they provided were the best in what was called domestic science. In 1904, she was graduated from Columbia University in the practical arts department of Teachers' College and became in that year a member of the household science teaching staff at the University of Illinois. Later, Miss Johnson went to Millikin University at Decatur as professor of home economics, shortly afterwards returning East to assume head professorship of the department of home economics at Rhode Island State Agricultural College. Her editorial work has included associate editorship of "Good Housekeeping" and directorship of Good Housekeeping Institute; editor of the "General Federation Magazine" and much freelance activity. At present Miss Johnson is writing, lecturing and doing special home economics work.

By HELEN LOUISE JOHNSON\*

**D**URING the twenty-five years I have been teaching and preaching home economics I have seen the theories of diet radically change at least three times. That is partly because until within comparatively recent years we have had to approach the subject of dietetics much as we do astronomy. It was Mark Twain who said that the thing most puzzling to him was how the astronomers found out the names of the stars with their telescopes.

Scientists have been prone to regard investigations that found out the names of such formulas as  $H_2O$  as pure science, while that which enables us to take advantage of the solvent property of water in making so practical a combination as soup, is designated as applied. If one is a so-called scientist he sits in the seats of the mighty; if he uses his knowledge in practical ways he has been—not is—regarded as lower in the scale of professional work. Of late we are openly recognizing that to be of any value theories must prove themselves of practical worth.

Nothing is more interesting to those of us who belong to the class called Oldsters, as compared to the group known as Youngsters, than the progress of a movement or gradual change in theory and practice as our knowledge becomes more extended, deeper and fully verified.

Where once we had changing beliefs and ideas, we have now known or established data.

### Food Problem More Than Individual One

Each time these dietetic ideas have changed, there has been definite advance from theory to fact; from belief to the known behavior of the individual under dietetic treatment. Each time there has been simplification of method and statement. Nevertheless there remain food problems of grave concern having to do with malnutrition in its many forms, as well as with the enforcement of food laws. Food is always a great problem from its production to its consumption. It is, first of all, an individual problem, but because individuals must depend upon other in-



Helen Louise Johnson

dividuals, it becomes a state and a national problem.

Dr. Alonzo Taylor has told us that four factors must be taken into consideration in the contemplation of diet—two intrinsic, two extrinsic. The intrinsic are determined by the physiology of nutrition and the psychology of alimentation, and the extrinsic factors are the supply of foodstuffs and the influence of trade. He puts special emphasis on the factors of supply and trade having as much influence on the selection of a diet as the factors of nutrition. This, I take it, is where the responsibilities of food control officials begin and why they are many times so great and so onerous. Their state does not give them authority to compel its citizens to be adequately and properly fed. And they are many times helpless before conditions which they know to be far more harmful to a community than the selling of chicory for coffee.

Under ordinary conditions, what we may term the influence of trade operates to sell goods, to create a demand for them, quite out of correspondence with their essential or

nutritional value. In cities the diet of thousands of people is determined not so much by climatic conditions, idiosyncrasies or nutritional demands, as by artificial manipulations of markets, advertising and publicity. In the rural districts habit, ignorance and tradition still rule—and to our distress. For any rural family, if they will, can have those foods that are essential to a healthy diet.

### Ignorance, Cause of Rural Food Problems

Yet with comparatively simple rules to lead us, increasing knowledge of the science of nutrition and in the training of those qualified to teach it, the prevailing ignorance of the province and influence of food upon health and conditions of living is appalling.

Within recent years several forces have united in trying to reach and improve the rural home. Of these none is more important than the home economics demonstrator, the state, county and district agents working under the direction of the Department of Agriculture. No one can be but impressed with the results of their efforts. No truer mis-

\*From address delivered before twenty-fifth annual convention of American Dairy, Food and Drug Officials, Miami, Fla., November 8, 1921.



sionaries go forth to difficult tasks with the zeal, courage and fortitude that accomplish results than these workers under the Smith-Lever Act, workers who get into the home and then aid, comfort, inspire and teach women for the benefit of this and coming generations.

No home is more difficult to reach than the rural one. Its comparative isolation has bred sensitiveness and the kind of pride that forms a protective shell or else complete indifference. The life of the farm man or woman is apt to be a hard one. It is a natural thing for both farmer and housewife to seek promised short cuts or relief and grasp at anything which seems to lessen labor or secure quicker results. The rural home has well-nigh supported the patent medicine man and the purveyor of things far less valuable than the lightning rod.

Some few years ago my train was caught in a washout somewhere on the borders of Arkansas. When hunger urged us to adventure some of the rash ones were poled in a flat-bottomed boat across flooded fields to a farm home whose inhabitants seemed willing to feed us for a consideration. I shall never forget it. The living and sleeping room of the house were reached by a ladder, but the cooking, eating, storing, stable part of the house was literally on the ground. The house was two stories in front, one in the back and the ground floor cared for pigs, dogs, chickens and humans indiscriminately. In one corner of the room bags of flour were stacked, damp, musty, smelly, unwholesome flour in cotton sacks. This was the staple food of the family, this and pork when they had it. They gave us eggs for a price while they lasted. Some brave men attempted the hot bread, but went no further than the first attempt.

#### Rural Malnutrition\*

It is in such places as these, scattered all over the country, that disease breeds. It is such diets that produce the non-resistance to infection and causes such scourges as tuberculosis, hook worm and pellagra—those troubles we class as malnutrition in its various forms. Malnutrition exists in city and country. It occurs in the homes of the rich and of the poor, but in the rural homes it need not be, even among the very poor in this world's goods. If they are too poor in energy or understanding they will not do certain things. But here it is we have our hardest tasks. We all meet bigotry, habits, traditions, hide-bound ideas and methods that are as difficult to change as the laws of the Medes and the Persians, but those of us who deal for the most part with urban folk, have an easy time of it as compared with those who fare forth to teach, assist and work in the country.

There are places all along the line where these home economics workers need help of food control officials. Our problems are mutual. Each human being is, I believe, trying for two things that make up life. He may interpret them differently, but, after all, what he is asking is enough food, clothing and shelter to make him comfortable and enough good health and leisure to secure enjoyment from these things. The kind of life we deem a success, the kind of food, clothing and shelter we demand and what we do with our leisure determine our standard of living.

Demands vary in different sections. The resident of Florida does not require the same kind of shelter as does the dweller in my own home where three inches of snow fell last week. Northerners have certain diseases common to our climate; Southerners have those common to theirs. We have the buckwheat mouth, face broken out, sores about the mouth, due to the too great use of buckwheat flour without proper additional nourishment. You have the self-rising flour mouth, an identical trouble arising from a flour deficient in nourishment. In any case, where disease of any kind is prevalent, its relationship to food shortage or deficiency can usually be established. Malnutrition is not

a disease of poverty, but a disease of ignorance and the people of a rural district are often like the sailors in the old story of the Amazon: Dying of thirst, they appealed to a passing ship for water, to receive the reply: "Lower your buckets, the water is fresh."

#### Using the Language of the People

We no longer have to talk in hundred calorie portions, balanced rations and proteid metabolism terms alone, to people who separate the silo so far from the house they do not realize that children are like calves in their food demands. Thanks to the scientists like Dr. McCollum, we can now teach in terms understood by any man or woman who speaks our common language. We can say a quart of milk a day, a cooked leafy vegetable once a day and a raw leafy vegetable twice a day will give us the essentials. We can say the old bread-and-milk diet for children needs to be supplemented by those green leaves, by fruit and vegetables to give bulk and needed salts; but we do not need to frighten the housewife, as we have done in the past, by talking in terms she cannot grasp, nor are we forced to converse about fat or water soluble vitamins when she needs to know what to serve for dinner.

Should all of us whose interests and work are allied with health concerns unite in a great drive to obtain a cow to every family where a cow can be kept and compel each family so living to grow vegetables for home consumption, we could accomplish in one year what it is going to take us decades to do in other ways. We may do this some day, but meantime there are certain direct things which will materially aid the sacrificial work of the women who are trying to redeem the lives of other women from ill-health and excessive labor and give to the children their birthright of a healthy, happy life.

It has been my task in the last few months to investigate certain conditions as they affect the ability of the home economics demonstrators to teach needed things. Among the club efforts, canning clubs, corn clubs and the like, they are endeavoring to have bread clubs in order to improve what is a habitual, standard food still of very poor quality in too many homes. In place after place the agents are unable to teach the making of yeast bread or the improvement of hot breads, because of the character of the flours sold in that particular place. Our efforts are directed toward correcting a faulty diet wherever this occurs, and in the rural districts this frequently means eliminating too much starch and substituting other things.

#### Different Climates, Different Breads

For natural and practical reasons into which I do not need to enter, the North in general eats yeast bread, and the South quick breads. Climate is the determining factor in this, that and habit. Out of every one hundred barrels of flour sold in several of the Southern states, some ninety are self-rising flour, a soft wheat flour, so deficient in gluten that it cannot be employed in the making of yeast bread even before the leavening is added. To this has been added by known formula phosphate, soda and salt. The teacher of home economics might be able to cope with the situation better if this thing were classified as an attenuated baking powder or sold for what it really is. Flour is a misnomer, and self-rising our an explanatory term.

We are not vastly distressed over individual use of this flour even if one chooses to eat pancakes or biscuit of it every morning of his life, although we would advise against it; but we are deeply concerned over the use of the self-rising flour by those whose diet is restricted so largely to grits, corn meal, some fat meats and hot breads. We want a cow to every little home, vegetables in the back yard, but meantime we want food control officials to help us secure such standards for this product as will maintain a proper grade. At present there seem to be no regulations controlling it, and while we prefer straight flour for our uses for every reason given, so long as this flour is sold and used, we must ask that it be made of such flours as to



secure its being nutritious and not subject to the abuses common to its present use.

The usual practice of making hot breads is generally known. To begin with, the formula calls for an excess of acid to allow for the pinch of soda the manufacturers say the woman always adds. If it were only a pinch it would not be so bad. But investigation shows that the cook all too frequently mixes the flour with butter or sour milk, if she has milk to use at all, and adds soda to sweeten this, as she terms it. Frequently, the leavening strength of the flour has sufficiently diminished or even when it has not, the cook still adds some more baking powder or its equivalent. For those who drink milk and eat plenty of green vegetables and butter fats, the vitamins present in the flour are a matter of little moment. But when family after family use flour, and cereals, corn meal, hominy and the like as their staple foods, the nutritive elements left by any process of manufacture or household use are of vital concern.

The better use of these products is our responsibility. We want to teach the making of yeast bread and better hot

bread. We need good bread flour. Therefore we turn to the food officials for help. We ask them to use their wisdom and influence to secure a proper standard for self-rising flour and such declaration of ingredients as will insure safety. We feel there should be a required minimum of gas strength at the time of sale with this flour, as with baking powder, to prevent the addition of further leavening ingredients.

Our rural problem is to secure a more varied diet. A campaign should be conducted for a cow and a green vegetable garden to every home. The farmer is the most independent person in the world if he can only realize it. Plato said: "Think of the country and of the city mouse and pity the sorrows of the city mouse." The city dweller is forced to beg, borrow, buy or steal everything he has. The family on a little lot of land has but fuel and clothes to purchase, if it will but cultivate a garden. Remember, it takes but a quart of milk a day, a raw leafy vegetable twice a day and cooked leafy vegetables once a day to give us what we need. Yet all over this country our rural population is suffering from a diet too greatly restricted to cereal foods and fat meat.

## Decrease in Margarin Factories

### Bureau of Internal Revenue Reports Collections in Taxes Nineteen Per Cent Less Than Those of Previous Year

**T**AXES aggregating \$4,595,000,765 were collected by the Government during the fiscal year ended June 30, last, at a cost of \$40,203,716, according to the annual report of the Bureau of Internal Revenue. These collections were \$812,579,486, or 15 per cent, less than the \$5,407,580,251 collected during the preceding fiscal year, while the cost of collection was approximately \$10,000,000 greater, averaging 87 cents per \$100 collected, as compared with 55 cents per \$100.

The report states that the number of margarin factories in operation decreased from 79 to 71 during the fiscal year, and for the first time in over a decade there was a marked decrease in the amount of margarin produced. The various factories produced a total of only 281,081,514 pounds in 1921, as compared with 391,279,512 pounds in 1920, a decrease of 110,195,998 pounds, or 28.2 per cent. These figures include both colored and uncolored oleomargarine. The decrease in production is attributed largely to business depression in general and also to the comparatively low price of butter which prevailed during the year, especially the latter part. Reports to the bureau, however, indicate that the industry is gradually returning to normal. It is stated.

#### Stamp Tax Receipts Decrease

The receipts from the stamp tax on margarin and the special tax imposed upon those engaged in its manufacture and sale amounted to \$2,986,465, a decrease of \$741,810, or 19.9 per cent of the amount collected from this source during the fiscal year 1920. This total was derived as follows: Margarin taxed at 10 cents per pound paid a tax of \$921,192 in 1921, as compared with \$1,194,720 in 1920; margarin taxed at one-quarter cent a pound paid \$655,427 as compared with \$930,343; the manufacturers' special tax totaled \$52,478 as compared with \$50,124 (and was the only one of these taxes to show an increase); the whole-sale dealers' special tax totaled \$450,986 as compared with \$494,961; and the retail dealers' special tax totaled \$906,380 as compared with \$1,058,126.

#### Adulterated Butter Taxes Decrease 39 Per Cent

The receipts from special and stamp taxes on adulterated butter for 1921 amounted to \$34,239, a decrease of \$22,783, or 39 per cent from the amount collected from this source in 1920. There were three duly qualified manufacturers of adulterated butter in operation during the year and their entire output was withdrawn tax free for export to foreign countries. In addition to the special tax paid by these manufacturers, the receipts for the year include special and stamp taxes collected on creamery butter found on the market containing moisture of 16 or more per cent, which brings it within the classification of adulterated butter.

The tax of one-fourth cent a pound on process or renovated butter and the occupational tax at the rate of \$50 per annum on manufacturers of that product yielded for the year \$15,511, compared with \$24,716 for the previous fiscal year, making a decrease of \$9,204, or 37.2 per cent.

#### Decline in Mixed Flour

There were 3,500,209 pounds of mixed flour manufactured during the year, compared with 4,716,432 pounds manufactured in 1920, a decrease of 1,216,223 pounds. The receipts from special and stamp taxes on mixed flour amounted to \$1,225 in 1921, compared with \$1,856 in 1920, a decrease of \$631, or 33.9 per cent.

Division of the country into 74 collection districts, instead of 64, as at present, is recommended in the report. The existing number of districts was authorized in 1914, since which time the number of taxpayers filing returns has increased from 600,000 to approximately 9,000,000 a year. The establishment of additional collection districts, it is pointed out, will directly benefit both the service and the general public.

A number of criminal actions were successfully prosecuted during the year against corporations and individuals, in connection with the evasion of taxes, resulting in the collection of \$15,000,000 in additional taxes, penalties and fines.



# Canning Problems Discussed at Berkeley

## Conference Under Auspices of University of California and Canners' League Examines New Opportunities in Preservation of Fruits

By W. V. CRUESS

Fruit Products Laboratory, University of California, Berkeley, Cal.

UNDER the joint auspices of the College of Agriculture of the University of California and the Canner's League of that state, a short all-day and evening course and conference on canning problems was given November 17 at Hilgard Hall, Berkeley. Many problems affecting the canning and dehydration of fruits were discussed by some of the leading authorities in the country representing the Fruit Products Laboratory, fruit growers and official state and national departments. Over two hundred canners and others interested in their problems attended the sessions.

E. W. Moorhead of the California Fig Growers' Association gave a report on the development of new fig products. One of these of particular interest was a fig paste which is molded into bricks and is used in very large quantities for the feeding of under-nourished children. Mr. Moorhead stated that the fig growers had spent over \$100,000 in the building and equipping of new fig preserving and canning plants. He said that they had put out about 15,000 cases of solid packed figs which found a ready market. The Kadota fig is used in their canning and preserving and makes an excellent product.

C. H. McCharles, assistant director of the Pure Food and Drug Laboratory of the State of California, spoke on the methods of determining solids in tomato products. He showed how a very slight error in determination of total solids in tomato products results in the loss of several hundred dollars per day to the canner of tomato puree. He stated that several published tables giving the relation between tomato solids and the specific gravity are in need of revision. In his work the only extremely accurate method has been found to be the drying of a sample in vacuum. This method, he said, should be used by canners to check the determination of specific gravity in tomato products by the Sprague cup method or the hydrometer method.

### Opportunity for Canners in Grape Juice

W. V. Cruess emphasized the opportunity for canners in California to can grape juice, especially Muscat grape juice, from second crop grapes that ordinarily go to waste or are used to a limited extent only, for sale in the fresh market. This fruit ripens so late in the season that it cannot be successfully dried in the sun to make raisins. He also stated that there was a great opportunity for the canning of jelly for the use of housewives, particularly in California, where there are enormous quantities of oranges and lemons available for this purpose. A sparkling, clear orange jelly and orange marmalade were exhibited, both products having been prepared from the canned juice. The use of concentrated fruit products in candy centers and the use of fruit concentrates for the preparation of bottled soda waters was also discussed and samples submitted to the audience.

Professor E. L. Overholser described several varieties of pears which would fit into the canning season in California and supplement the canning of Bartlett pears. Among these he mentioned the Klapp Favorite, an early ripener, and the Bosc, a late ripener.

S. A. Bjannason gave the results of his experiments in the cold storage of soft fruits in which he was able to retain the shape and color of many perishable fruits so that they may be served with cream and sugar in January and February. These are as satisfactory as fresh products for

this purpose. The essential point in his process consists in immersing these products in a dilute sirup.

The spoiling of canned foods was thoroughly discussed in the evening session by Dr. F. K. Meyer of the University of California, Dr. E. C. Dickson of Stanford University and Dr. I. C. Hall of the University of California. The need of further work on the *Bacillus Botulinus* was emphasized by all of the speakers.

### Theories on Tin Plate Perforation

W. V. Cruess gave a brief summary of the latest theories on the perforation of tin plate. Many of the canners advanced the idea that perforation is perhaps due in some cases to faulty seaming of the cans, although the general consensus of opinion was that perforation by California products was generally due to insufficient exhausting of the cans.

Professor A. W. Christie of the Fruit Products Laboratory pointed out the advantages and disadvantages of dehydration in comparison to the canning of fruits. He emphasized the fact that certain products are to be the most efficiently marketed in the dehydrated form.

P. H. Nichols of the United States Department of Agriculture stated that the demand for dehydrated corn has so far greatly exceeded the supply and that in his estimation dehydrated corn will soon take its place on the market in quantities equally as large as dehydrated pumpkin flour which has already made good with the American housewives.

G. B. Ridley gave the results of his work in the drying of pie fruit in dehydrators and stated that in his estimation the dehydration of pie fruit would prove a profitable factor for canners.

At the afternoon session the desirability of establishing a complete experimental commercial cannery by the university in co-operation with the canners was very thoroughly discussed. Mr. Graham, manager of the Flickenger Cannery of San Jose, strongly supported this plan. Such a plant is urgently needed by the university in order that canners' problems may be investigated on a practical scale.

### "Live a Little Longer"—Keynote of National Health Exposition

"Live a little longer" is the message to be conveyed by the National Health Exposition to be held in the armory at Louisville, Ky., February 1-9, 1922. According to the plans recently announced, the exposition will comprise three main divisions: non-commercial educational exhibits, commercial exhibits and general program.

The commercial exhibits must have definite educational features, must be accepted products and have a definite relation to health. Because the floor space devoted to such exhibits is limited to about twenty thousand feet, the committee in charge reserves the right of selection. The advantage of the commercial exhibitor, it is believed, will be that the right of selection will be so exercised that each exhibit will develop a positive relation to all others.

Louisville, during the period of the exposition, will be the scene of an institute conducted by the United States Public Health Service for the instruction of those engaged in public health activities particularly in the section of the country tributary to Louisville. Twenty of America's foremost students and lecturers on public health matters will present their topics in an open forum.



# Vitamine Content of Milk and Dairy Products

## Science Still Trying to Get at Facts—Pending Further Investigations, Sweeping Dietary Changes Not Recommended

Editor's Note.—R. Adams Dutcher has held instructorships in chemical and agricultural research at South Dakota State College Experiment Station, the University of Missouri and the University of Illinois. In 1913 he was appointed assistant professor of agricultural chemistry at Oregon Agricultural College and in 1917 became associate professor of agricultural biochemistry and head of the section of animal nutrition of the University of Minnesota. Beginning this year, he has been associated with Penn State College in his present capacity.

By R. ADAMS DUTCHER

Head of Department of Agricultural Chemistry, Pennsylvania State College

ONE of the most significant and encouraging signs of the times is the unusual interest displayed by the public at large in matters which have to do with the nutritive value of foods and feeding materials. It is almost impossible to open a newspaper or magazine in which we do not find editorials, special articles, news items and even advertisements emphasizing the special advantages of certain food materials. While much of this published material is without merit and misleading, it is indicative of a very live public interest in the "whys" and "hows" of feeding—a situation that did not exist a few years ago.

We find the medical profession laying greater stress on the importance of diet in relation to health and disease. As a result of health surveys in many of our city schools, authorities have been surprised to find a rather large percentage of school children under weight for their age. Further studies have shown that many of these undernourished children came from the so-called "well-to-do" families of the community. In other words, nutrition workers have observed that a lack of money is not the sole reason for the conditions just described. There is very little doubt but that most of these children would have grown normally if they had been fed properly and intelligently. This has been proven in many cases by co-operating with the mothers or by using remedial dietary measures at school. Physicians and social workers have been forced to conclude, from their observations, that much of the malnutrition which exists in every community has been due to a lack of interest in and a knowledge of the fundamental facts underlying intelligent feeding. Not a little of the difficulty lies in the fact that mothers, regardless of the family income, are foolishly economical, especially in the buying of dairy products and fruits. The latter statement is especially true with regard to milk. On account of the unusual importance of milk in the diet of the growing child, considerable interest has centered in the nutritive value of milk products and the various factors influencing the nutritive value of milk.

Since Hopkins' first observations, in England, that small amounts of milk possessed unusual growth promoting properties and since the advent of the vitamine hypothesis, even greater interest has been manifested in milk and products manufactured from it. Within the last ten years large numbers of experiments have been conducted upon experi-

mental animals with the view of shedding further light upon the vitamine content of milk and considerable progress has been made, although it is somewhat early to predict just what effect these findings will have upon agricultural practices and manufacturing methods.



R. Adams Dutcher

### Variance in Vitamine Content of Milk

Probably one of the most important and significant hypotheses advanced with regard to the source of vitamins was that which postulated that animals were incapable of synthesizing or elaborating these necessary substances. It became evident that the plant was the only agency upon which the animal could depend for its vitamine supply. Immediately the question arose in the minds of many investigators: "Can we influence the storage of vitamins in animal products by regulating the quantity of vitamine-containing material in the animal's diet?" The belief that this could be done was supported by the fact that milk from various sources varied in vitamine content. Dr. Eckles, Dr. Kennedy and the writer, with the help of graduate students, conducted experiments, in which dairy cows were fed rations chosen in such a manner that the ration was deficient in all of the vitamins, especially vitamins A and C. With regard to the latter, the antiscorbutic vitamine, we were able to show that guinea pigs will develop scurvy upon relatively large amounts of milk obtained, under the conditions just de-

scribed, while relatively small amounts of "spring milk" would prevent the development of scurvy symptoms. We were able to show that the milk becomes deficient in this vitamine rather slowly when the cow is placed upon a vitamine-poor ration; on the other hand, the milk begins to improve in antiscorbutic potency within a short time after the cows are given access to pasture grass, although its nutritive value improves as the summer season advances. Other investigators came to similar conclusions by somewhat different method of attack.

### Effect of Seasons on Nutritive Values

A similar situation holds for the fat soluble vitamins. Rats will grow better on small quantities of "spring or summer milk" than on larger amounts of the vitamine-poor milk. Rats grow well on diets containing 5 per cent of butter fat, obtained from "spring milk," while they do not do well on diets containing as high as 20 per cent of butter fat obtained from the vitamine-poor milk. Undoubtedly, this partly explains the disagreements in the



results of the various investigators, for the nutritive value of milk is quite likely to show seasonal variations. This may be one reason that some investigators contend that condensed milks or milk powders contain certain of these vitamins, while others are equally sure that they do not. It may be that certain of these products have been made at the season of the year when the vitamin content of the diet was very low.

The water soluble vitamin B does not seem to show such marked fluctuations, as a result, no doubt, of the fact that most winter dairy rations contain a large amount of cereal grains which are relatively rich in this vitamin. It might also be added that climatic conditions have an appreciable effect. We have observed that periods of drought, followed by browning of the pasture, are reflected to some extent, in the growth curves of experimental animals. We have not been able to see that the milk from cows fed a good winter ration, containing silage and alfalfa hay, is much inferior to "summer milk," although we have made no systematic study of the question.

#### Relation of Feed to Nutritive Value of Eggs

It is interesting to learn that Dr. Hughes of the Kansas Experiment Station has observed that the nutritive value of eggs also fluctuates with the vitamin content of the feed, lending additional support to the theory that diet is a very important factor in influencing the nutritive value of animal products. As previously noted in *The American Food Journal*, English investigators have shown that hog fat is usually deficient in fat soluble A, due to the fact that the hog is forced to subsist on a diet which is relatively poor with regard to this vitamin.

Considerable interest has developed with regard to Dr. Steenbock's interesting observation relative to the relation between the color of food products and the amount of fat soluble vitamin which they contain. He shows that many food materials which are rich in this vitamin are also deeply pigmented. Yellow June butter, for example, is always richer in vitamin content than pale winter butter. Dr. Steenbock associates this color pigment, known as carotin, with this vitamin. Whether they are identical or not, he is uncertain. Dr. Palmer of Minnesota, Dr. Drummond of England and others have shown that certain foods may be fairly rich in vitamin A but contain little or no carotin. Dr. Steenbock found that yellow corn was superior to white corn with regard to its content of fat soluble vitamin. This observation led to the recommendation, by a feeding authority in a neighboring state, that the farmer sell all of his white corn to the starch factories, reserving the yellow corn only for feeding purposes. This is an unfortunate suggestion, in the mind of the writer, for until the experiments have been repeated and the results applied to live stock, it is unwise to jump at conclusions and condemn the white corn, even if it seems, at the present time, to be slightly inferior to the yellow corn. It is very evident that pigment and vitamin formation occur simultaneously in the growing plant, and it is entirely probable that their association is fortuitous.

#### Effect of Heat Treatment on Milk

With reference to heat treatment of milk, we find conflicting views. Dr. Daniels contends that continued heating of milk at high temperatures causes precipitation of the lime salts which adhere to the vessel causing the milk to be deficient in lime. When we consider the relatively large amounts of lime salts in milk, it is somewhat difficult to see how the small amount of lime lost in this manner can be of dietary importance. Nevertheless, Miss Daniels was able to show that the addition of lime salts improved the nutritive properties of heated milk. Preliminary experiments at Minnesota in feeding unheated raw

milk to calves seem to show that calves cannot subsist on milk alone for many weeks until pathological nervous conditions develop. The addition of calcium carbonate to the raw milk prevents these symptoms for relatively long periods, in spite of the fact that the milk is rich in lime salts and no lime has been lost through heating.

It is quite evident that vitamins A, B and C are susceptible to high temperatures, although vitamin B is apparently more stable than the others. Vitamins A and C are readily susceptible to oxidation. Butter loses its potency when stored for long periods, and its yellow color is lost simultaneously. That this is undoubtedly an oxidative change is shown by the fact that aerated butter fat or butter fat subjected to ultra violet light loses its vitamin activity. Ultra violet light produces ozone which hastens the oxidative action. Here, again, the pigment is destroyed at the same time. English investigators have pointed out that the small amount of vitamin occurring in hog fat is undoubtedly destroyed by the existing methods of rendering which subjects the lard to high temperatures and air for relatively long periods.

#### Heat and Antiscorbutic Activity

We have found that milk may be heated in closed bottles for thirty minutes at 144 degrees Fahrenheit without appearing to have lost its antiscorbutic (vitamin C) activity. On the other hand, if the same milk is heated and agitated in the open air or subjected to a current of oxygen the antiscorbutic properties disappear at lower temperatures than 145 degrees Fahrenheit. Hydrogen peroxide, a violent oxidizing agent, destroys vitamin C in milk or orange juice at room temperature, although the destruction is aided if the milk is heated. Boiling for a short time has no appreciable effect, although there are very good reasons for believing that heat possesses some destructive action.

With reference to milk powders a similar situation seems to exist. Excessive oxidation seems to have a destructive action. On the other hand, a spray powder, which has been made properly using a vitamin-rich milk, may contain a relatively large proportion of the original vitamin content. Apparently, a high temperature for a short period is somewhat more advantageous than a lower temperature for a long period. This is probably due to the fact that the combined effects of heat and oxidation have better opportunity to manifest their destructive properties.

#### Further Investigation Needed

Just how important these observations will be from the standpoint of feeding and manufacturing, it is difficult to say. Certainly, the science is too young and the data too few to recommend sweeping changes in the present practices. Scientists are merely trying to get at the facts and it does not behoove any one at the present stage of vitamin work to rush in and condemn products which have found a valuable place in the American dietary. Even if it were proven, eventually, that condensed milks and milk powders were devoid of vitamins—which I doubt—there would still be a very important place for these products in the diet when supplemented properly by other foods. It would be just as inadvisable to make sweeping condemnations of these important commodities as to condemn white corn as a food because it appeared to be somewhat inferior to yellow corn. What we should try to do is to get at the facts, prove conclusively that they are facts and then take steps to improve methods of manufacture and to supplement our deficient foods with those which are known to be rich in vitamins.

In the present state of our knowledge, it is advisable that the human dietary contain a variety of fresh fruits and vegetables and liberal quantities of eggs and milk.



# How to Enforce the Food Laws

## Control Official's Course Marked Clearly in Prosecuting Offenders and Avoiding Political Influences

Editor's Note.—Wilbur F. Cannon has been for many years a writer and lecturer upon food and drug control, sanitation, hygiene and preventive medicine. He served as a member of the Colorado Legislature for seven sessions, was nominated once for Lieutenant Governor and was appointed State Food and Drug Commissioner of Colorado in 1907. In 1909 he was appointed to the same position, but retired in 1911. Again, in 1919, he was reappointed to the same post. As member of the committee on co-operation between the Federal and state control officials under Secretary of Agriculture James Wilson, he has assisted in preparing the code of co-operation now in effect.

By WILBUR F. CANNON\*

Food, Drug and Sanitary Commissioner of Colorado

THE problems of the control officials are so numerous and varied that I have for a long time thought that such an officer should have the wisdom of Solomon, the legal mind of John Marshall, the fighting face of Jack Dempsey, the courage of Leonidas, the home-run record of Babe Ruth and the ability for throwing custard pies possessed by Charlie Chaplin. To begin with, the pure food laws of the nation, and the various states, in the main are pitifully ambiguous and woefully deficient. There are so many amendments and provisos written into the National Food and Drugs Act and the state acts which were undoubtedly written into it at the request, solicitation and possibly coercion of an interested lobby, that it is a wonder that anything has been accomplished by its provisions.

Quite too often it has been, and it is yet true, that some officials are appointed, not because of their particular abilities to construe and enforce these laws, but because they amount to just about enough in politics to receive attention from the bosses and not quite enough to be given more responsible positions. Food and drug control officials should be born and not made, but if made should be a by-product of a competent training school. Also, the tenure of office of these officials usually are far too brief. Added to this, we have the well-known fact of the small remuneration usually received by the state official for his work.

### Federal Methods Not Applicable to State Inspection

The task of the Federal control official is comparatively easy, but when we attempt to apply the same rules pertaining to the work within the states it becomes confusion worse confounded. Let me give you a few instances. Soda fountain sirups pass in interstate commerce presumably correctly labeled. What sort of a label shall we place upon the glass of mint phosphate served at a soda fountain when it is artificially colored, or preserved with benzoate of soda. And this problem, of course, follows with almost every article served at the soda fountain. Bromo seltzer is correctly labeled in the original package, but where is

the label to be placed when it is taken into the intestinal tract of the ultimate consumer? Shall he be notified that he is about to consume acetanlid? Or, shall the label be placed upon the glass he is drinking it from? It is quite easy for the Federal official to require sausages and meat products containing added water or cereals to be so labeled, but it is not so easy within the states to label the retail package to conform with these regulations. And

then, the ever-present nightmare of misbranding—where shall we begin and where shall we stop? Again, we find the Italian hand of the Washington lobby when they wrote into the law those mystical, magical, significant words: "Compound, imitation or blend," and the little innocent word, "added," as applied to poisonous or deleterious substances. Many vegetables, fruits and nuts contain certain ingredients which in sufficient quantity would be poisonous or deleterious. We can snatch a handful of atmosphere from the city streets at dusk and find it contains more nitrous or sulphuric acid than could be found in a sack of bleached flour; and more arsenic can be found in lettuce than in some food substances against which some successful prosecutions have been maintained.

### Political Influence

We have with us always the problem of political pull. I have sometimes gone out on a case to obtain evidence and found high state officials and politicians waiting in my office for my return to ask me not to get heavy

with the party against whom I had just obtained the evidence. My immediate superior officers in the past have at times insisted on the dropping of cases, and in one particular case some years ago, I was obliged to threaten to tender my resignation with the additional threat of a blow-out in the newspapers unless I was permitted to go through with the prosecution. These are all your problems as well as mine.

What are the remedies? In the first place political pull should cease to exist. The tenure of office should be practically for life; his salary should be at least that of a bricklayer and he should be a responsible official without any



Wilbur F. Cannon

\*From address read before twenty-fifth annual convention of Dairy, Food and Drug Officials, Miami, Fla., November 9.



board or officers over him whatsoever. There are other remedies which undoubtedly will suggest themselves. One of the regrettable things in connection with food and drug enforcement is that the dear public ceased to take much interest in it.

#### Food Law Enforcement

Passing briefly to the question of fines or imprisonment, notwithstanding the rapid advance made by civilization, I still believe in the wisdom of Solomon: "Spare the rod and spoil the child," except I should amend it by making the rod of malleable iron. Any other kind would soon be worn out. It is always the earmark of a new official when we read from his reports that an offender has been warned or cautioned to go and sin no more. Coming into office, I at once set at work obtaining evidence. Prosecutions fell thick and fast, and they are still falling; and I have found out that you have first got to impress upon the citizens of your state that you mean business; that you cannot be trifled with; that you cannot be bribed or "bulldozed" and that a case once started cannot be fixed or dismissed. Thereafter your work is easier.

#### Fines and Imprisonment Favored

As to the question of fines and imprisonment, I favor both. I am like the husband whose wife and mother-in-law were visiting Miami, Fla. The old lady died and the wife telegraphed the husband, "Mother died to-night, shall I have her buried here or cremated?" The husband promptly wired back, "Have her buried there and cremated both, take no chances." In deciding these cases, it calls for a man of a judicial temperament, an evenly balanced mind who can study the law before him and see in the hidden recesses of the mind and heart of the offender, and to determine to his own satisfaction whether he is a crook or a careless dolt.

#### Severe Penalties

For the class of men who would sell diseased meat, rotten or decayed vegetables, who would put water into oysters or preservatives into hamburger, or commit any

of the other fifty-seven varieties of food and drug adulteration knowingly, wittingly and for profit, I should say put him behind the bars. For the offender who is innocently guilty by no fault of his through the crookedness of another, be he manufacturer or jobber, or through the act of an employee, I should say a nominal fine. But for the man who would trifle with the life and health of his customers by adulterating drugs and medicines which are used for the cure or mitigation of disease, or who would bottle up ditch water with limberger cheese and label it as a cure for consumption, locomotor ataxia, headache, backache, and corns, I should say both fine and imprisonment. But above all, we should make the conviction for these crimes sure and certain.

#### Many Efficient Officials

A review of the food and drug work for the past fifteen years and an acquaintance with the officials who have been engaged in the work permit me to emphasize the magnificent work that has been done in some of the states where the commissioners have been conscientious, honest and whose employment has been for the greater portion of that period continuous. May I cite as instances in point such men and such states as Dr. Crumbine of Kansas, "Jim" Faust of Pennsylvania and our own beloved president, Dr. Rose of Florida. And then by contrast, let me ask you to look at some of those states where the officials have been appointed as a reward for their political activities, and where changes have been so frequent that you are reminded of the telegram from the section boss, "Off again, on again, gone again Finnigan." Either one of two things in the course of time will prove to be true: Food, drug and dairy officials will be appointed for merit, as well as the inspectors under them; they will be continued in their tenure of office as long as their intelligence remains acute, and will be retired on a substantial pension; and the public will again become interested and will support them in their work. Or, the reverse of all of these things will prove to be true and pure food will pass on out of our memories like the blue grass fad, monkey glands glands and the "real thing" bottled in bond.

## Rumor of Margarin Bill Unfounded

### No New Legislation Affecting Margarin Contemplated by Department of Agriculture

(Special Telegram to The American Food Journal)

WASHINGTON, D. C., Dec. 14.—So far as can be learned, the Department of Agriculture is not at present contemplating any additional legislation affecting the margarin industry. Inquiry of officials in the solicitor's office, the Bureau of Chemistry and the Bureau of Animal Industry, the three offices which would be most concerned in such a matter developed, that in the first two nothing was known regarding new legislation of this sort and in the third, while there had been some discussion of new legislation, it was not now proposed to ask Congress to enact any new law regarding margarin.

The report current in margarin circles is that the department is shortly to ask Congress for legislation which would bring the manufacturers of vegetable oil margarin under the meat inspection law, which now covers the manufacturers of animal fat margarin. There has been some

pressure brought to bear along this line, it is known, on the ground that the present laws are discriminatory in that the animal fat margarin is subject to supervision and strict regulation throughout the whole course of manufacture while the vegetable oil margarin is subject only to the Pure Food and Drugs Act.

Officials of the department believe that discussion of new legislation is the result of the work now under way in the Bureau of Internal Revenue of the Treasury Department, amending and greatly tightening the oleomargarin regulations. The new regulations are now being formulated and will be the subject of an open hearing some time in the near future.

The Department of Agriculture, while closely watching the progress of the Internal Revenue Bureau on this subject, does not at present contemplate taking any hand in the matter.



# Underprocessed Canned Vegetables and Fruits the Most Frequent Cause of Botulism

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Editor's Note—The following is an official abstract of the findings of Dr. J. C. Geiger, Assistant Surgeon General and Chief of the Botulism Commission of the United States Public Health Service. Further results of these investigations will be published in subsequent numbers of *The American Food Journal*.

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IN December, 1919, a systematic investigation of botulism, of which there had recently been a number of outbreaks, was proposed by the National Cannery Association, Cannery League of California, and the California Olive Association. Epidemiologist J. C. Geiger was detailed to cooperate on behalf of the service in these investigations, which were jointly carried on with the statistical department of Stanford University, the University of California, and the California State Board of Health. The intent of the original plans was to confine the study of botulism to the State of California, but these plans were later broadened so as to include the consideration of outbreaks of this disease throughout the United States.

In the light of recently acquired information, it is evident that botulism is not uncommon in the United States. In California and Washington about 15.4 per cent and 10.8 per cent, respectively, of the total mortality due to food poisoning can be attributed to botulism. In other States this percentage is less; for example, in New York about 4 per cent of all deaths due to food poisoning are caused by this intoxication. Botulism in the United States is therefore by no means infrequent, but as a cause of death it is not so important as might be inferred from the attention paid to it in the daily press. Although the number of actual cases of botulism is thus far comparatively small, it should, however, be emphasized that in recent years a striking increase of this disease has taken place in various localities. It is unfortunate that food poisoning, food infections, and botulism are reportable diseases only in the States of California, Oregon and New York.

The investigations of the service were directed along the lines of determining the factors responsible for the occurrence of the disease and especially, if possible, the forces operative for its rather disquieting increase. A primary requirement of any discussion of the subject is a definition of botulism from a clinical, pathological, bacteriological, and toxicological viewpoint. This has not as yet been made. It can readily be seen, therefore, that detailed epidemiological studies are a necessary preliminary to this investigation.

## Seasonal Incidence of Botulism

During the month of April 1921, an intensive survey on botulism was conducted in the Yakima Valley, Wash., by the service representative. In a general way the botulism observations made in this instance differ in no respect from those previously found for the entire State of Washington, or for California. The case mortality rate for the 11 outbreaks in Washington was 66.6 per cent, namely, 16 deaths among 24 cases. Again, botulism was observed only during the fall, winter and spring months—from October till May; one-third of all the cases occurred during the month of November. A reasonable explanation of this seasonable inci-

dence is the customary habit of consuming preserved vegetables and fruits during the seasons in which the fresh products are not available.

A bacteriological study of over 100 soil specimens collected in Yakima Valley explains the rather frequent development of botulism poison in underprocessed home canned vegetables and fruit. It is probable that *bacillus botulinus* is an inhabitant of the virgin soil. It may be mere coincidence due to the sampling, but the available data indicate that from the mountain ranges toward the valleys, following the descending course of the river, there is a progressive reduction in the infection of the soil. For example, virgin mountain soil contained *bacillus botulinus* spores in 83 per cent of the instances, while earth collected in the adjacent Tieton and Yakima Valley sections gave positive cultures in 57.1 per cent and 55.5 per cent of the trials, respectively. On the other hand, the Toppenish area, which is farther removed from the source of the Yakima River, supplied comparatively few infected soil specimens (11.7 per cent).

Observations made in California and Wyoming confirm the data collected in Yakima and indicate that *bacillus botulinus* is a common anaerobe in the mountain soil. Studies thus far completed indicate that several areas in the United States may harbor comparatively few spores and consequently botulism is either absent or is introduced with food products from territories in which the organism is common.

## Intoxication Rate High

All observations of botulism indicate that the intoxication rate is very high; as a rule all who ate the poisonous food became ill. The number of fatal cases varied greatly in different outbreaks.

With reference to the presence of *bacillus botulinus* in food the following observations are made by Geiger:

Spores of the organism are sometimes quite abundant in soil and any food product soiled with earth can carry these potential elements. Moreover, it is well known that the spores of the majority of recently isolated strains are very resistant to heat. They share this property with the other representatives of the group of proteolytic anaerobes. Any method employed in the preservation of food which fails to consider these facts is apt to favor spoilage and, consequently, in a certain small percentage of instances, the growth of *bacillus botulinus* and its toxin. It can, therefore, be stated that in the majority of outbreaks underprocessed and therefore improperly preserved nonsterile vegetables and fruits have been the vehicles of the toxin. The conclusions apply to the commercially as well as to the home canned products. It is not surprising that the various home-canning procedures may be inefficient when it is realized that the commercial canning industry, which has for years labored with improved machinery, a trained personnel, and in many instances with scientifically controlled processes, has not entirely succeeded in obviating spoilage and with it the occasional occurrence of botulism.



# EDITORIAL

## Exaggerated Claims for Vitamines

A NOTABLE contribution to the much-discussed subject of vitamins appears in this issue of THE AMERICAN FOOD JOURNAL. Dr. Casimir Funk, the discoverer of these elusive food factors, has granted an interview which upsets to a considerable degree many of the notions conceived regarding them.

The great publicity which the vitamine theory has received in recent years has attracted the patent medicine man and the cure-all manufacturer and the public is now being beseeched to buy vitamine pills, vitamine chocolate and various other such products for which extravagant claims have been made.

Dr. Funk, of course, does not comment on these extremes of commercial utilization of the vitamine theory, but confines his attention to some of the claims which have been made regarding vitamins in the more common foods, notably milk. Cow's milk, he says, contrary to popular opinion, is not the perfect food for infants. It is too rich. Claims which have been made that we are largely dependent upon milk for our supply of vitamins are not supported by Dr. Funk, who adds that the content of vitamins in milk has been very much exaggerated.

He also calls attention to "great misrepresentation" in denoting vitamine A as the "growth" vitamine. The absence of an amino acid would retard growth and it would be just as reasonable, he declares, to call amino acids "growth" elements as it is to credit vitamine A with this function. Vitamine A, he adds, must be supplemented by all of the recognized food constituents.

Dr. Funk recently appeared as a witness in the appeal of certain manufacturers of milk compounds from the Wisconsin law which prohibits the manufacture and sale of these compounds in that state. He takes issue with some other experts on the chemistry of foods and declares that such compounds are not deleterious to health when properly supplemented by other nutritive values.

It appears from statements by Dr. Funk and others who have recently been giving the subject of vitamins intensive study that our knowledge of the subject is still too indefinite and incomplete to become the basis for such a law as Wisconsin has passed and the law now pending in Congress to prohibit the manufacture and sale of skimmed milk compounds in the entire country. The entire case against these compounds has been built up on the vitamine theory. Prof. R. Adams Dutcher of the Pennsylvania State College, who has given close application for the past two years to the vitamine content of milk, says in an article in this issue of THE AMERICAN FOOD JOURNAL that it does not behoove anyone to rush in at this stage of knowledge of vitamins and condemn products which are alleged not to contain these properties. Even if it were proved that condensed milk and milk powders were devoid of vitamins—which Prof. Dutcher doubts—there would still be a place, in his opinion, for these products in the diet when supplemented by other foods.

It is interesting to note also that President Rose of the Association of American Dairy, Food and Drug Officials, stated in his address to the recent convention at Miami, Florida, that any effort to restrict the manufacture of valuable foods until more knowledge has been obtained regarding these factors would be an economic blunder.

## Medical Men and Food Manufacturers

COLONEL ROBERT McCARRISON, one of the two most prominent figures in the British Indian Medical Service, is now in the United States, and although he is meeting primarily with medical men and is lecturing before medical groups, he has a message that will most probably have to be listened to by those engaged in the manufacture of foods. His thesis is this: About 25 per cent of all cases that come to clinics for help are gastro-intestinal diseases; practically all such ailments are caused by faulty diet; therefore, if we can correct the faults in the diets of the human race we are eliminating one-fourth of its sickness and suffering. That is a rather far-reaching statement, we admit, and to cure one-fourth of our debilities by changes in our food is a very ambitious program. But Colonel McCarrison has some unusually convincing facts in support of his proposition.

For a long time investigators in the medical sciences have occupied themselves to a very large extent with bacteria and other forms of micro-organisms as the cause of disease. So well have they done their work, and such a stupendous field did they open up, that many folks have been led to believe that these bugs are the cause of all our woes. But within the last decade attention has been directed to food and its relation to health. As a result, another world has been exposed to our vision. And again, of course, a few cranks appeared who wanted to explain everything in terms of vitamins, or of proteins or minerals.

But the real contributors to medical science are those who attempt to strike a balance among all the factors involved. In most cases, a disease is caused not by a factor but by factors. And this is where the food question comes in. Food is the one thing that is operating in us all the time, its influence is continuously exerted. It may or may not be acting in conjunction with invading organisms, or unfavorable climate or other environmental factors. The one affects the other, and the food factor is always present.

We can distinguish three main lines of investigation in the science of food: The influence of one constituent on the other, the occurrence of these constituents in various foods, and the preservation of the foods so as to leave the constituents intact. The first phase is the field of the medic; the second, that of the bio-chemist; the third, that of the food manufacturer. As fast as the first two establish the facts, the food manufacturer must take cognizance of those facts in his processes. He thus makes himself the conservator of the public health. It is his privilege to do so. It is his right, his duty to do so. Furthermore, his status in business will demand that he do so. If he does not see to it that his products retain unimpaired all the properties that nature put into them, that in preparing the food for consumption nothing is taken out, put in, or destroyed that will decrease its food value, and that he actually improve its food value if he can—if he does not, in so far as science is able to tell him, do these things, his rivals surely will. For just as modern business cannot succeed without advertisement, just so future advertisement will not succeed unless it convey to the prospective customer exact knowledge of the product—absolute, concrete knowledge as to its worth. Therefore, if anything is left undone in the manufacturing end, the advertising end will surely fall down.

We therefore believe that it behooves the food manufacturer to keep informed on all developments in the scientific world that pertain to his field. In this way only can we hope to reduce that particular one-fourth of human ailments mentioned above.



# Specialty Men Urge Better Business Practices

## For Metric System, Interchangeable Mileage Books and Increased Conferences of Trade Associations—Against Salesmen's Bonuses

**D**ECLARATIONS against salesmen's bonuses and in favor of the metric system, interchangeable mileage books and increased conferences between the representative trade associations of specialty manufacturers and wholesalers were among the outstanding resolutions of the American Specialty Manufacturers' Association convention at Atlantic City, November 16, 17 and 18. In other resolutions duly passed pertaining to governmental matters, the association approved the work of the Federal Trade Com-



From left to right—Wm. L. Sweet, Rumford Chemical Works, Providence, R. I.; Mrs. Sweet; Fred Mason, American Sugar Refining Company, N. Y.; W. H. Ukers

mission in preventing unfair competition and went definitely on record as favoring further appropriations for the Bureau of Chemistry and a tightening of Federal control of food sanitation by amendment to the Food and Drugs Act.

Characterizing the practice employed by certain manufacturers offering special inducements or bonuses to wholesalers' salesmen or retail grocery salesmen as "manifestly unfair, vicious and demoralizing," the specialty manufacturers indicated clearly that such methods were not to be tolerated among the members of the association.

"Certain manufacturers," the resolution states, "offer these inducements either directly or indirectly as bonuses or special commissions to be paid directly or indirectly to such salesmen or clerks or both on their individual sales to retailers and consumers. . . . We regard and declare it [this system] to be a manifestly unfair, vicious and demoralizing practice for manufacturers to subsidize wholesalers' salesmen or retailers' clerks by offering or paying such salesmen or such clerks directly or indirectly, independently and in addition to the profit provided for the wholesaler or the retailer, a bonus, special commission or other inducement upon their individual sales to retailers of such manufacturers' products."

Copies of this resolution were sent to the National Wholesale Grocers' Association, the Southern Wholesale Grocers' Association, the National Retail Grocers' Association and the various state wholesale grocers' associations and retail grocers' associations, all of which were requested to take action and declare themselves upon this practice. Copies

were also furnished to the various trade papers throughout the United States.

### In Favor of Metric System

The stand in favor of the metric system was in line with the position taken at previous conventions approving the eventual adoption of the international metric system of weights and measures. The resolution states that such a measure would result in the "simplification of our present cumbersome system" and advises as an immediate course "the double marking of English weights and metric equivalents as of value in goods for export and for its educational advantage."

The association endorsed "the need and value of more frequent conference between the representative organizations in the grocery trade for the purpose of proper discussion of the many matters fundamentally affecting the interest and welfare of all branches of the grocery trade."

Another resolution stated that "the American Specialty Manufacturers' Association does hereby earnestly recommend to the railroads of the United States the importance and value of interchangeable mileage books."

### Bureau of Chemistry Praised

Conspicuous among the resolutions advocating changes in governmental policies was the endorsement of the work of the Bureau of Chemistry and a declaration in favor of increased appropriations on the part of Congress for the continuance of its activities. "This association endorses the splendidly constructive scientific research work being done by the Bureau of Chemistry," stated this resolution, "and hereby recommends that Congress encourage such work by greater appropriations therefor, to the end that the services of the ablest scientists may be secured and the scope of such work extended."

The association endorsed the equitable enforcement of the Federal Food and Drugs Act by the Bureau of Chemistry and pledged to Walter G. Campbell, acting chief of the bureau, its co-operation.

### Resolutions on Government Matters

Other resolutions pertaining to the Federal activities were as follows:

"RESOLVED, That the American Specialty Manufactur-



From left to right—R. H. Bond, McCormick & Company, Baltimore, Md.; J. G. Gilfillan, Genesee Pure Food Company, Leroy, N. Y.; Mrs. F. D. Bristley; F. D. Bristley, Royal Baking Powder Company, New York City





From left to right—W. M. McCormick, McCormick & Company, Baltimore, Md.; Mrs. Chas. B. Knox; Mrs. J. E. Knox; J. E. Knox, C. B. Knox Gelatine Company, Johnstown, N. Y.



From left to right—Charles Wesley Dunn, Counsel, New York City; Mrs. Dunn; Mrs. W. W. Frazier, Jr.; W. W. Frazier, Jr., Franklin Sugar Refining Company, Philadelphia, Pa.

ers' Association does hereby pledge its support and cooperation to the Federal Trade Commission in the prevention of the use of unfair methods of competition.

"RESOLVED, That the American Specialty Manufacturers' Association does hereby again approve and recommend the early enactment of an amendment to the Federal Food and Drugs Act whereby it is declared unlawful, in effect, to introduce into interstate commerce any food produced, stored or handled under such insanitary conditions as to render it unfit for human consumption."



J. T. Emery, President The American Food Journal, and Mrs. Emery

#### Reconstruction Problems

Reconstruction problems must be faced with courage and wisdom, stated another resolution passed at the Atlantic City meeting. "We have an abiding faith that we will rise to the heights necessary for their successful and righteous adjustment, and that we as a people and as a nation will go to higher planes of usefulness and achievement. . . . This association pledge themselves to do each and every one of the things of which they are capable to bring about a return to sane and sound economic, industrial and social conditions."

The arms limitation conference was whole-heartedly endorsed and the association expressed "sincere hope for its unqualified success."

The association paid a graceful testimonial to its president, Fred Mason, in the following resolution:

"RESOLVED, That the officers and members of the American Specialty Manufacturers' Association do hereby express their deep love and admiration for Mr. Fred Mason, and their grateful appreciation of his sagacious, efficient and constructive administration of the association during the past two years; and

"BE IT FURTHER RESOLVED, That the American Specialty Manufacturers' Association does hereby extend its sincere and hearty congratulations to the American Sugar Refining Company in its good fortune in securing the affiliation of Mr. Mason, who brings to the company extraordinary and outstanding ability, knowledge and experience in the successful merchandising of grocery products."

Thanks were likewise expressed to officers and committees of the association; the auxiliary committee of the association under the chairmanship of D. O. Everhard; Charles Wesley Dunn, legal counsel; H. F. Thunhorst, secretary; the convention speakers; the press and the Hotel Traymore. Resolutions in memoriam were passed on behalf of Warren Ogden of Mills Brothers Company, New York City; Walter H. Lipe, former vice-president of the Beech Nut Packing Company; James M. Hills, former second vice-president of the association; F. W. Barrett, "dean of the grocery trade press" and S. W. Roth, founder of the "Wholesale Grocer" and "Retail Grocer."



J. H. Stephenson, Fels & Company, Chicago, Ill., and H. F. Thunhorst, Secretary, New York City





Drawn by Miss Josephine Streatfield for The American Food Journal.

## FRED MASON

Re-elected President of the American Specialty Manufacturers' Association

WHEN Fred Mason was recently re-elected president of the American Specialty Manufacturers' Association he said, in thanking the members, that he would rather be president of the Specialty Manufacturers than President of the United States. This may have sounded like an extravagant statement to some, but to others who know of the keen interest which Mr. Mason has taken in the association since its formation it had the ring of sincerity. Under the guidance of Mr. Mason, with the co-operation of other officers and directors, the American Specialty Manufacturers' Association has attained a very important position in the commercial food world. The convention passed a resolution thanking Mr.

Mason for his work and incidentally wished him success in his new connection as vice-president of the American Sugar Refining Company, which he assumed recently after a term of years as president and general manager of the Shredded Wheat Company. Mr. Mason began work as a grocer's boy, later becoming a jobber's salesman, a flour salesman and then secretary of retail grocery associations. In 1907 he became connected with the Diamond Match Company, of which he was eventually assistant salesmanager. In 1910 he became general salesmanager of the Shredded Wheat Company and later its president and general manager.



# Point of View of the Wholesale Grocer

## His Opinions on Packing Standardization, Selling Policies, Commercial Bribery and Packers' Consent Decree

BY J. W. HERSCHER

President, National Wholesale Grocers' Association

**Editor's Note**—Although the chief officer of the National Wholesale Grocers' Association, J. W. Herscher, is a man who has had only two business connections in all his life. As a boy in 1889, he started work in a little West Virginia retail store, left this job in 1896 to "begin at the bottom" in one of the largest wholesale groceries in the state and ever since has been affiliated with the same concern—Lewis, Hubbard & Company. The following is an address delivered before the thirteenth annual convention of the American Specialty Manufacturers' Association.

**T**HE path of the wholesale grocer is not strewn with roses. Each and every one of us must be up and doing to keep up with the procession. Competition is so keen in our business that the best among us, on an average, is able to make but 2 per cent net on turnover. The present expense of warehousing and distribution, I think I am safe in saying, consumes practically the entire allowance in the way of compensation made by manufacturers for the performance of a service which would cost them more as individual distributors if an attempt were made to dispense with the wholesaler, who, as a result of keen competition, must be economically efficient to survive and who only because he handles the many products he does, is able to spread the expense or overhead over the countless items of his stock.

### Consistent Selling Policy

I think I am expressing the general sentiment of the entire food trades when I say that after a manufacturer decides upon a certain selling policy he should "stick" to it and give it a real test, because the very moment he begins to carry water on both shoulders, the water begins to get warm, and sometimes it gets quite hot, with resulting demoralization to the trade. If a manufacturer devises his own selling plan and distributive system, if this is fair and clean throughout and kept so, I have enough faith in the wholesale grocer to believe that he will be your loyal distributor.

We are bitterly opposed to commercial bribery in any and all its forms, and feel that the Federal Trade Commis-

sion should be commended for its activity on this subject.

No one can faithfully serve two masters at the same time. A salesman should not be tempted to divide his loyalty and sincerest efforts between his employer and some foreign interest. An intelligent salesman who has the best interests of his employer at heart will resent any attempt to tamper with his conscience. The manufacturer who has any extra compensation to distribute should first try it on the principal and not attempt any secret device on an employee.

Free deals, or "something for nothing," is a business anomaly. Common prudence dictates that a free deal is not based on sound principle, and it should be abolished forthwith. If the price quoted on a product is down to hard pan, it will obviate the extra labor involved in concocting schemes.

We grocers want to suggest the adoption of a uniform size invoice. Of course, exact uniformity, I know, is hardly possible, but to the grocer receiving invoices from every state in the Union it would be quite a boon if unified and simplified invoices could be provided.

### Packing Standardization

A lack of knowledge on the part of a good many merchants as to how their goods are packed results in more or less loss through a failure to work toward uniformity of shipping containers, quantity in each can, parcel, bundle or case. Time should therefore be taken to investigate the subject of standardization clear down to the consumer.



J. W. Herscher



Officers and Representatives of Largest Specialty Concerns in Country Gathered at Thirteenth Annual



We believe that standardization will furnish us with some practical benefits and cause savings all along the line. The features that occur to me at present are as follows:

1. All goods of a similar size and kind should be packed in the same number of units to a case, to avoid errors by jobbers in billing and shipping to customers.

2. Parcel Post regulations in regard to weight and size of all cases should be borne in mind to avoid the necessity of special packing for Parcel Post shipments on the part of the jobber.

3. Goods should be packed in quantities that the average retail grocer can purchase at a time, thus avoiding the necessity of selling in less than case lots and repacking in the jobber's packing room.

4. Cases should be made of a size practical for handling from a warehouse and shipping point of view.

Mercantile records show that a considerable percentage of the retail merchants do not make a success of their business. Business today must be conducted on entirely different lines from those tolerated twenty years ago. Over-selling by some manufacturers has caused them to take great losses through spoilage and other defects which could have been avoided by the exercise of better judgment and discretion.

#### Is the Wholesaler Doing His Share?

Another item that has been given wide publicity is the relationship of the grocer, both wholesale and retail, to the depression or stagnation that has obtained in the food industry for some months past. The wholesaler and the retailer can distribute only what the consumer needs or desires. You must not expect the distributor of your products to become a speculative football. We cannot take on more commodities than we can take care of. The demands of the public being the index of a distributor's ability to absorb and dispose of any given quantity of products, how can it justly be said that the wholesaler has not done his share throughout the period of commercial and industrial depression which has just been encountered? If there are any merchants in any line of activity who have done their best to increase depression, then all I can say is that they are ideal candidates for an insane asylum.

#### Wholesalers' View of Packers' Decree

One of the most popular, but fallacious, theories in relation to the Packers' Consent Decree is the one which ascribes to the wholesale grocery trade the credit for the entry of this document. This is not the fact. The decree was entered and agreed to by the "Big Five" aggregation of meat packers after criminal proceedings for the violation of our laws had been commenced by the governmental authorities, and it was then, and not until then, that these gentlemen went to Washington and pleaded with the then Attorney General Palmer to be allowed to participate in this obligation. The matter was not hastily or inadvisedly considered. A criminal prosecution was imminent, and the meat packers, aware of the magnitude of the charge against them, deemed it the best policy voluntarily to allow this judgment to be taken against them.

The evidence which resulted in this proceeding was gathered by governmental agencies, for which, first and foremost, we must give due credit and thanks to the Federal Trade Commission, whose officials worked long and hard to assemble the mass of evidence presented. Various committees in Congress added to the already formidable pile, and finally public sentiment, usually slow to arouse, but once aroused, inexorable in its demands, pointed in no uncertain way the path of expediency. Even the packers, powerful and ruthless as they are, have wisdom enough to bend their knee in deference to this unseen, yet ever-present, force. So that if the accusing finger of public opinion was responsible for the present plight of the meat packers under the decree, it is unfair for them to impute to us what was brought about by other causes.

In some quarters it has been rather taken for granted that the wholesale grocer and the packer are traditional enemies, and that the enmity on the part of the former is prompted by jealousy or other human vices aroused by the size of these companies, or a fear that we in our industry will be supplanted by the self-styled efficiency and business acumen of the gentlemen conducting the meat packing business. I want to deny emphatically any such claim. We have managed to live through many fads and fancies in the distribution of food products, and we emerge today stronger and more efficient than ever we have been before.

#### Not Afraid of Competition

No, we are not afraid of good, virile competition, honestly and fairly conducted. We cannot withstand, however, a competition which is based on privilege, illegality, discrimination and unfairness. If we have a fair field, we want no favor, but the rights guaranteed to us by our forefathers, of freedom and equality.

The issue is not alone between the wholesale grocer and the packer. It is vastly more important. The struggle is one between monopoly on the one hand and freedom and independence in business on the other. Is there any limitation as to industry? Does it affect the merchant any less than it does the citizen or the consumer?

Perhaps our motives in the endeavor to preserve the independent and competitive business of the country may be misunderstood, but no element in the food trade is exempt from the effects of the domination of the packers over it. The manufacturer and the grower are just as susceptible to the injury, we fear, as the distributor. There is abundant proof in authentic governmental reports extending over a period of years concerning the methods the packers pursue in the accomplishment of their purpose, which is the complete domination of the food industry of this country.

#### Extent of Packers' Control

We cannot ignore the giant strides made by these companies, and the extent of the control already secured. It is not a trade question; it has become one of vital public interest. If the evidence had been furnished by some group of merchants, I should be the first to charge partisan prejudice; but we find an impartial governmental board prompt-



Convention of American Specialty Manufacturers' Association, Atlantic City, N. J., November 16-18



ed by no interest but that of the public welfare calmly and dispassionately reporting to the President of the United States, at his express direction, facts of such a startling nature that even the most disinterested citizen is aroused and astounded at the boldness of the operations. Nothing short of absolute and complete domination of every business which they can take on—from the raw state into the hands of the consumer—will satisfy them. The packers

have always claimed to be thorough, but not until now have I come to the realization of their right to that claim.

Shall we assert our inalienable rights of equality and justice for all, or shall we supinely relinquish these fundamental precepts of our citizenship and sink to slavery and servitude. If we capitulate now, we are not worthy to bear the glorious honor of American citizenship.

## Backing Up the Retailer

### Local Advertising, Production of Readily Handled Goods and Widespread Distribution Benefit Manufacturer as Well as Local Merchant

**Editor's Note.**—Francis E. Kamper is a prominent retail grocer of Atlanta, Ga. He was for five years president of the Atlanta Food Dealers Association and is a director of the Atlanta Chamber of Commerce and charter member of the Rotary Club of that city.

By FRANCIS E. KAMPER\*

President, National Retail Grocers' Association

**A**LL the wild ideas of unbalanced agitators the world over, in their ignorant and pitiable quest for happiness through revolution, confiscation of property, and crime, cannot overthrow the eternal truth that the one route to happiness through property or government is over the broad and open highway of SERVICE. And service always means industry, thrift, respect for authority and recognition of the rights of others."

Thus declared W. G. Sibley recently in the Chicago "Journal of Commerce," and we may all heed the message. Our individual businesses are bound up in this statement, for we are an important factor in the happiness and prosperity of our country.

The question was asked me recently by a man who for a long time did not stand very well, but more recently has come into prominence locally as a true prophet, "Which is the greatest in importance, the production or the distribution of a food commodity?"

#### Importance of Distribution

At the time this question was asked of me, I naturally replied that the production was the greatest. I now think that my answer was incorrect, and that the distribution of an article is the greatest factor. Of course there would be no distribution without production—and on the other hand there can hardly be any production without distribution.

Sydney Anderson, chairman of the joint commission of agricultural inquiry, states that, of the consumer's dollar, 37 cents goes for production, 14 cents for all profits, and 49 per cent for distribution. Accepting this as a fact, it therefore looks as if what we must do in looking after the consumers welfare is to look into the 49 per cent. I dare say this relative proposition wouldn't do for all here.

It also occurs to me that what all of us have to consider regarding this particular problem, is not the question so much of markets, that is the fluctuation of prices

up or down, but rather the problem of merchandising and turnover.

#### Retail Stores and the Public

Does it often occur to us that the buying public has the final decision in this matter? Why is it that there are so many grocery stores in this land of ours, varying from one for each 212 people in some states of the country, to 789 in other states? Why such a variation? We might give various answers, but the fact remains that the public supports these stores and, therefore, in a way they demand them. It also means either that some stores have to exact too large a toll from the public or that many merchants are accepting pitifully small wages in compensation for their services. It is a fact that the average for this whole country is one retail grocery for every 315 people.

These stores, in their humble way, endeavor to carry nearly all the articles that the public wants; and unfortunately, their volume of sales are so small that they are constantly handling either a very limited variety of goods or else are fearfully overstocked with stale goods.

Specialty manufacturers are vitally interested in either of these propositions. As I see it, they are unable to control and under our

democratic form of government never will be able to control the number of retailers.

#### Container Problem Should Receive Attention

Manufacturers and wholesalers want their goods sold nationally, however. They want every store in every neighborhood to handle their products. I, therefore, do not hesitate to say that the size of containers that should be given most earnest consideration.

There are many manufacturers who are giving serious consideration to this matter and I know of one large

\*From an address delivered before the eleventh annual convention of the American Specialty Manufacturers' Association, Atlantic City, N. J., November 17.



Francis E. Kamper



pickling and preserving company with an excellent distribution of its products that has made a marked success of its merchandising and distribution problem by packing in cases containing a half dozen bottles or cans. The small additional cost of this method of packing has in no way interfered with the sale of their products.

#### Bad Retail Advertising

We need better merchants among the retailers, and more of this class. One of the great weaknesses of the average retailer is the fact that he rarely ever does the right kind of advertising and consequently he doesn't do any advertising. The downtown men, the chain stores and the large retailers are doing nearly all of the advertising for food aside from that which the manufacturers are doing. This is leading to one condition very rapidly, and you don't need a telescope to see the end of the line.

I am convinced that there are many breakers ahead for specialty men. Some of us grow excited and rush to Washington and try to pass a law that will help out the situation. It may do this temporarily, but it is bound to have some drawbacks. I am referring particularly to the Stephens-Kelley Bill. At this time there is great wave of approval by retailers all over the country and most of the states have expressed themselves as favorable to this bill. Some have not, however.

This country has gone on record time and again that it opposed to trusts or any such aggregation of either capital or labor that will permit just a few to control the destinies of our people, and therefore, laws have been enacted that will prevent just this kind of a combination. To-day the thought that this country is a better place in which to live because of the opportunities given to individuals working out their problems with equal opportunities, is stronger than ever before. It therefore follows with equal force that your business and my business will be more worth while if we are enabled to conduct them with equal opportunities. It also follows that great organizations of hundreds and thousands of stores are not expressive of the best American citizenship.

#### Production with Minimum Fluctuations

In following out all of the principles of turnover, as relating to the manufacturing of food products and their distribution, wouldn't you be enabled to produce cheaper, more profitably, if your demand was steady with minimum fluctuations? May I ask, can you accomplish this very thing by having an uneven demand and a demand that is beyond your control? May I ask this same question in another form. What is your best method of sales, several large firms each, we will say, taking from two to ten per cent of your output; or a larger number of smaller customers whose aggregate purchases would keep your factory running steadily. The loss of any one of these would not effect your production and cost to any appreciable extent.

When you have lost one of your large customers, we will say a ten per cent man, what happens to your production cost? What happens to the personnel of your organization. Somebody has to lose his job, factory costs mount skyward and consumers' cost also mounts.

Specialty manufacturers know better than I do the things that may influence the loss of their customers. Competition may, and therefore, fair margins which are legitimate go glimmering or else the factory shuts up. Certainly, the majority of both manufacturers and retailers do not understand advertising and its relation to distribution.

#### Great Attention to Retailers

Fred Mason is quoted as saying that the greater attention his former Shredded Wheat Company gave to their retail distributors, as compared with that given by competitors, was largely responsible for the remarkable success of Shredded Wheat.

Manufacturers should be prepared, in their 1922 advertising campaigns, to have their creative consumer demand campaigns to work with their distributive channels.

Why isn't it practical for them to spend this money on a basis of 50 to 50, or 60 to 40, or 70 to 30?

Why wouldn't it be practical to sell goods upon the following plan:

Go to ten to twenty representative retailers in any town under 200,000 population, offer to pay for an inch, two inches, or more if you can afford to, in their regular daily or weekly advertisement in their newspaper, to appear as a part of their regular advertisement and keep this up for a definite time. Better still, place it upon a percentage or cents per case basis, saying to Mr. Good Retailer, "Here, if you advertise in your daily papers, we will take blank space in your advertisement in addition to our space which we are going to use to advertise our goods. The newspaper will charge us with this space, but by going in with you, your ad will appear as larger and, therefore, will be more effective." What will your local brokers and wholesalers get from this? The finest and strongest co-operation possible, and, to my mind as a retailer, this will prove ten times as strong as the present methods. At times, it might be practical to control the expenditures upon a basis of percentage of sales.

#### Reinforcement of Consumer Advertisements

Your general creative consumer advertisement will be backed up by the fact that your consumers will know just where they can purchase your goods and furthermore your local wholesalers can say to any retail grocer, "Mr. So-and-so, just a few blocks from you, will advertise these goods this week and you will not want him to take all of the advantage of the advertising the manufacturer is doing. Cash in on all of this advertising and stock these goods, display them either in the window or by making a special floor or counter display." Consumers will know immediately where your goods can be secured at the right prices.

More of the better class of merchants should be encouraged to advertise. By this method of co-operative sales and advertising, I believe that you will get away from what Secretary Balsiger, of the National Association of Retail Grocers, terms the "price of rascality," for you will then convince the mass of the retailers that you wish your goods sold for what they are worth, and you will at once impress upon the public that your goods are worth your selling price to the wholesaler. Your list to the retailer would indicate what they are worth.

#### The Price of Rascality

The "price of rascality" has killed more good food articles than anything else, has nullified the efforts of millions spent in advertising and has wrecked the careers of more manufacturers and sales managers than any other single factor.

If the price that the manufacturer charges the retailer and that the retailer charges the jobber is fair, why should some few individuals who use the daily newspaper in their various localities, constantly place the lie upon your efforts by making the public believe that you are charging too much for it. The favorite methods of popularizing their stores is to ride into public favor by using to their own interest the manufacturers' sales efforts and advertising.

Specialty salesmen should be instructed as to the correct way, the one only way to figure percentage of profit, and percentage of cost of doing business. How often I refuse to buy merchandise from a specialty representative on account of his statement of the profit I can make by selling his goods, backed up by national advertisements. Many salesmen give the lie to their firm by telling me that there is a 25 per cent gross margin in their goods, when there is only 20 per cent, that there is a 20 per cent gross margin when there is only 16 2-3 per cent.

#### A Real Basis for Figuring Cost and Profit

The selling price and the amount of sales form the only correct basis for figuring cost and profit and any other method is not only incorrect, but will lead your customers and yourselves to bankruptcy as certain as there are stars in the heavens. One dollar always represents selling price, and cost of doing business determined through years of experience plus whatever profit on each turnover you expect, must be deducted from selling price and the remainder, a decimal figure, is cost. Practically, invoice cost expressed in cents and dollars divided by remainder decimal cost, will give the correct selling price to obtain the desired profit with all expenses of operation.



# Representative Views on Coffee Making

IN the November issue of THE AMERICAN FOOD JOURNAL there appeared a collection of representative opinions on methods of coffee preparation. A steward of one of the leading American hotels, a sales manager, an inventor and four presidents of coffee roasting firms gave their respective judgments as to which brewing process—percolating, boiling, steeping, dripping (filtration method) or tricolator—is the best. The almost unanimous preference was for the filtration or tricolator methods.

This discussion has elicited during the past month further responses from readers of THE AMERICAN FOOD JOURNAL. In the hope that this symposium of opinion may help to clear away some of the prevalent misconceptions on this important subject, the editors take pleasure in publishing some letters recently received from C. W. Brand, president of the Widlar Company, Cleveland, Ohio, and past president of the National Coffee Roasters' Association; Ida Bailey Allen, director, Mrs. Allen's School of Good Cookery, and well-known writer and lecturer; Arbuckle Brothers, New York City, and C. Scotty, chef of the Hotel Ambassador, New York City:

## Don't Boil Your Coffee, Says Carl Brand

Editor, THE AMERICAN FOOD JOURNAL:

It is not easy to lay down any hard and fast "rule" for making coffee, because there is really no standard. Some people like their coffee strong, some like it weak, some like a dark roast and some like it roasted to a light cinnamon color. It is a waste of time to talk about what method turns out the most "healthful" brew. To my mind the coffee that does a man the most good is the coffee he likes best, the one from which he gets the greatest amount of pleasure and satisfaction, because, after all, the most important contribution which coffee makes to our daily fare is the element of pleasure.

Most of the readers of THE AMERICAN FOOD JOURNAL are familiar with the scientific research which has been in progress at the Massachusetts Institute of Technology for the past year and a half. This research is conducted in the Department of Biology and Public Health, under the direction of Professor Samuel C. Prescott, the head of that department. In Professor Prescott's address before the National Coffee Roaster's Association (reprinted in the November issue of THE AMERICAN FOOD JOURNAL), he states that he tackled this problem—and I am sure this came as a surprise to many—not by trying to solve it by scientific formulas but by making a series of independent practical tests. He had brewed coffee in his laboratories by various methods and then called in a number of students and instructors and asked them to sample the different brews and tell which they liked the best. The test was made without acquainting any of the subjects with its purpose and without letting them know how the different cups of coffee they tasted were prepared.

Professor Prescott's results, as shown in the article, seem to indicate that the majority of people would prefer coffee made by the filtration (or drip) process. He says that the percolator process shows less desirable results and that long continued heating processes, or those in which coffee is actually subjected to boiling, are the worst of all, as they bring out bitter or astringent substances and drive away the fine aroma supplied by the volatile oils of the coffee bean.

I am glad to see that Professor Prescott has promised to continue his research further and tell us why the majority of people prefer coffee made by the filtration process with water just below the boiling point. In other words he expects to tell us what different chemical substances are developed by the different processes of preparation.

The writer is satisfied with these experiments, as far as they go. If the majority of people prefer coffee made this way, this is the kind of coffee the majority of people prefer.

C. W. BRAND,

President, The Widlar Company, Cleveland, O.

November 17, 1921.

## Mrs. Allen for Tricolator

Editor, THE AMERICAN FOOD JOURNAL:

I am most enthusiastic about this coffee-making device (the tricolator). It certainly makes the best coffee that can be obtained, and at the same time, a beverage which contains less caffeine than percolator or boiled coffee. I have been acquainted with it for a long time, using it in my Westfield Domestic Science School tours and in Mrs. Allen's School of Good Cookery, here in New York. It has been introduced successfully in a good many restaurants, where the coffee is justly famous.

IDA BAILEY ALLEN,

Director Mrs. Allen's School of Good Cookery,  
August 6, 1921 New York City.

## Experience Important in Coffee Making

Editor, THE AMERICAN FOOD JOURNAL:

A good French chef will maintain that his art cannot be learned from cook-books and that experience is the only competent teacher. A recipe to him is only an approximation.

The making of good coffee, if not an art, is at least a knack, and perfection can be attained only by experience. The liquor from a tablespoonful of Rio coffee is quite different from that produced by a like quantity of mild Santos coffee; a measure of coarsely ground coffee will contain less coffee than the same measure of finely ground coffee. Water containing an unusual amount of alkali or iron will make a different flavored coffee than if soft water be used. Coffee to be served with rich cream may be made stronger than if milk be used with it, and finally the individual taste of the drinker is always an unknown quantity to the recipe maker.

The essence of a cook's artistry is flavor. Responsibility for the flavor of coffee in the cup is a divided one resting partly upon the roaster and partly upon the cook. A careful roaster who himself packages his product and proudly places his name upon the packages may be relied upon at all times to maintain his blend and roast at an even standard. Once the cook has achieved a perfect cup of coffee after more or less trying experiences the same degree of care will produce the same satisfying result. Our contribution to THE AMERICAN FOOD JOURNAL'S symposium is therefore not a recipe nor a choice between drip coffee, percolated coffee or old fashioned coffee, but the general observations just made, to which should be added suggestions on two points that are important in the attainment of the most satisfactory result, yet often neglected, viz.: (1) Keep the coffee pot immaculately clean. (2) Do not let the coffee stand on the grounds after it is made. To keep the coffee pot clean requires an occasional scrubbing with brush and cleansing powder; airing it in the bright sunshine is fine for it. If the pot be of tin or enamelware, watch it carefully, and do not use it for coffee making after the tin or enamel has become worn or chipped off in spots exposing the iron underneath. Once the coffee is done the grounds ought not be left in it. When not made in a percolator, the coffee should be strained into a clean vessel in which it may be kept hot until served.

ARBUCKLE BROTHERS,

November 30, 1921.

New York City.

## Ambassador Chef Favors French Filter

Editor, THE AMERICAN FOOD JOURNAL:

My own method of making coffee is as follows:

In the first place it is essential that the coffee be of the finest quality obtainable. Secondly, you will find better results by using the French filterer or coffee bag.

Twelve ounces of coffee to one gallon of water for breakfast.

Sixteen ounces of coffee to one gallon of water for dinner.

Boiling water should be poured over the coffee siphoned and put back several times. Do not allow the coffee grounds to remain in the urn more than fifteen to twenty minutes at any time.

C. SCOTTY,

Chef, Hotel Ambassador, New York City.



# FOOD NEWS FROM WASHINGTON

## Sharp Conflict of Opinion at Hearings on Consent Decree

### Canners and Wholesalers Oppose Modification Before Departmental Commission—Vernon Campbell Supports Packers' Plea

Washington Bureau, American Food Journal,  
622 Albee Building, Washington, D. C.

**O**PPPOSITION to the modification of the so-called packers' consent decree under which the packers would be permitted to again enter the wholesale grocery business, was voiced by packers and wholesale grocers from all parts of the country. A large number of witnesses journeyed to Washington to give oral testimony before a commission appointed by Attorney General Daugherty, and consisting of Herman J. Galloway, representing the Department of Justice, chairman; Bayard T. Hainer, attorney for the packers and stockyards administration of the Department of Agriculture; and F. C. Hall, representing the Department of Commerce.

The packers were not represented at the hearings, and the support of the application for modification was furnished by Vernon Campbell, on behalf of the California Co-operative Canneries. This organization had a long-time contract with Armour & Company for the supply of canned goods. He denied that the packers would monopolize the canned goods business if permitted to re-enter it, or that they were given special privileges that amounted to unfair competition in the use of refrigerator and peddler cars for the distribution of unrelated food products.

In the course of his testimony, Mr. Campbell accused the wholesale grocers with coercion and intimidation in their efforts to prevent canners from joining in the plea for a modification of the so-called consent decree. He further declared that the wholesalers were charging too much for distributing canned goods.

He advocated modification of this decree at least to the extent of permitting the packers to handle canned goods on a commission basis. Distribution through the packers, insofar as his company was concerned, he stated, was far more advantageous because of the efficient sales methods, organization and equipment of the packers as compared with the wholesale grocers, and that it was much easier to secure money with which to finance a pack because all he had to do was to present the packers' orders to a bank in order to obtain such funds as might be necessary to carry the concern through the season. He admitted that the packer to whom he sold his pack held a mortgage on one

of his plants in the amount of \$200,000. He added, however, that he had secured \$700,000 in loans from the War Finance Corporation to assist in handling the business.

#### Line-up of Opposition to Modification

Opposition to the modification sought was handled by ex-Senator Hoke Smith of Georgia, on behalf of the Southern Wholesale Grocers' Association; William C. Breed of Breed, Abbott & Morgan, New York, counsel for the National Wholesale Grocers' Association, and a number of other prominent attorneys, including Clifford Thorne of Chicago associated with Mr. Breed, and Roland B. Stevens of Montpelier, Vt.

The witnesses included the officers of the wholesale grocers associations named, officials and representatives of state wholesale grocers' associations, canners, representatives of wholesale and retail coffee and tea associations, and representatives of the Federal Trade Commission.

The attack on the suggestion that the decree be modified was made on the following grounds:

To permit the packers to handle canned goods on a commission basis would result in a complete overturn of present methods of financing the canned goods business, the canners declared. Under such a scheme, the canners would have to depend upon the retail grocers all over the country to pay for their products at or subsequent to delivery, for such a practice would no doubt be adopted by the packers and the wholesale grocers would have to follow suit.

#### Problem of Financing the Canners' Pack

The financing of the canners' pack is now largely centralized in the wholesale grocers, who contract for their canned goods months in advance, and upon whose orders the canners can obtain money from the banks. The canners are compelled to furnish farmers with seed with which to raise necessary crops and this would be difficult if the present financing system was overturned.

If sold on a commission basis, the wholesale grocer becoming merely a distributor, responsibility for payment would rest upon the retail grocer, and there would be a great deal of added expense upon the canner in collections and bad accounts.

The grocers and their counsel pointed out that there are between 4,000 and 5,000 wholesale grocers in the United



States and, therefore, there could never be a wholesale grocer monopoly. On the other hand, there are only five big packers, who, by reason of their enormous finances, could readily control the source of supply and in so doing, the wholesale and retail market.

It was stated that the packers would not have to secure the bulk of the business in the United States in order to secure control; they could, for instance, buy in surplus stocks and so dominate the market that wholesale grocers could not hope to compete with them. An instance was cited where No. 3 tomatoes were sold by the packers in the Middle West at \$1 a dozen at a time when the wholesale grocers had to pay \$1.70 for the identical product.

During the war, when the packers were not permitted to make more than 8 or 9 per cent, witnesses charged they sold at cost or less their canned goods and other unrelated products, being able to charge off any such losses against the larger profits made from their regular lines of business, doing so in order to create a demand for their own brands in advance of the time when they could enlarge their rate of earnings without coming in conflict with Government authorities.

An instance was cited where one of the packers sought to place an order with the California Raisin Association for 800 cars of Muscatel raisins, representing 25 per cent of the total 1916 pack, the raisins to be put up under the buyer's private brands. The latter was refused and the negotiations failed.

#### Packers' Pressure on Retail Grocers

Charges were also made that the packers' representatives in the cities were in the habit of bringing pressure to bear, prior to the adoption of the consent decree, to compel retail grocers to buy unrelated lines from the packing houses. It was declared also that their competition could not be met for the reason that they dealt only in articles of large profit—canned goods netting 15 per cent—whereas the wholesale grocer, with an average net profit of 2 per cent and gross profit ranging from 7½ to 12½ per cent, according to location, was compelled to carry sugar, flour and other commodities with respect to which the profit is small and the leakage and loss large.

A further advantage is accorded the packers in the use of refrigerator and peddler cars, for in merchandising grocery lines quickness of delivery is a great factor. This was not agreed to by the Interstate Commerce Commission in its recent decision in the meat packers' case, and the whole-

sale grocers, believing otherwise, have since endeavored to secure a reversal of this finding in the case of lard, lard compounds, certain canned goods not affected by the decree and other related articles.

The wholesale grocers denied that they had used any efforts to coerce the canners into withholding their support from the proposal to modify the decree and representatives of the Western Canners' Association denied any knowledge of actions complained of.

The Interdepartmental commission will consider all of the testimony presented to it at these hearings, in conjunction with a large volume of material presented to it confidentially from persons coming to Washington for the purpose and received also through the mails. Later it will submit its conclusions to the Attorney General upon whom rests the final decision as to whether the Supreme Court of the District of Columbia, wherein the decree was effected, shall be asked to grant a modification of the existing document.

#### Trade Commission Against Change

Objections of the Federal Trade Commission against modification of the packers' consent decree were elaborated by W. Y. Durant, assistant chief economist of the commission, in speaking on December 13 before the Government board hearing arguments on the proposal to alter provisions of the decree.

The control of monopolies, the witness said, falls within the sphere of Congress. The lawmaking body, he said, should enact laws for the control of all monopolies regardless of their character. In accordance with this principle it was said that Congress should assume the questions now before the governmental board for decision.

Sooner or later, Mr. Durant said, there must be a "show-down" on the monopolistic character of the principle meat packing companies. Their principal aim, he said, is to attain and command a dominant position in particular lines for the purpose of controlling prices and dictating the operation of the particular industries.

The meat packing companies, he said, aim to absorb those lines that compete with its business. Wherever necessary these lines absorbed are expanded until whole industries are taken in the packers organization for the purpose of controlling prices of particular commodities.

## Government to Aid Food Industries

LARGE sums of money will be spent by the Government in behalf of the food industry during the fiscal year beginning July 1, next, according to estimates for appropriations which have been submitted by the various departments to Congress.

Three-quarters of a million dollars will be spent for this purpose by the Bureau of Chemistry, of the Department of Agriculture, alone. Thirty-eight thousand dollars is asked to enable the enforcement during the year of the act of 1897 prohibiting the importation of impure and unwholesome tea. For the administration of the food and drugs act of 1906, \$671,401 is asked, and \$20,500 is estimated as the cost of the study and improvement of methods of dehydrating materials used for food, in co-operation with individuals and organizations interested in the subject.

Ten thousand dollars is asked by the bureau for its investigation and development of methods for manufacturing table sirup and sugar and the manufacture of sweet sirups by the utilization of new agricultural sources. It is also proposed to investigate the use of casina or youpon as a beverage and \$5,000 is asked for the work. This plant, which grows wild in the South Atlantic and Gulf States, produces a caffein beverage somewhat similar to tea. Preliminary work has developed that by special preparation a

delightful beverage can be obtained which, in the opinion of many, is equal in every way to tea.

The interests of the food industry abroad will be taken care of by the Department of Commerce, in whose estimates are many items of this nature. It is proposed to make an investigation of foodstuffs in Central and South America during the year, and \$6,000 is asked of Congress for the purpose. A similar sum is asked for investigations of vegetable oils in the Far East.

#### Extend Activities of Foodstuffs Division

Fifteen thousand dollars is asked for the continuation of the Foodstuffs Division of the Bureau of Foreign and Domestic Commerce, one of the export divisions created several months ago. It is proposed, however, to extend the bureau's activities in this direction, and Congress has been asked to make appropriations of \$15,000 each for the establishment of three divisions to be devoted to vegetable oils and breadstuffs, meat and dairy products, and canned goods, respectively. It is recommended, also, that several divisions be created to take care of general problems of export trade, and \$15,000 each has been asked for divisions to cover transportation and communication, foreign investments, advertising, packing and credit methods, and maps and commercial geography.



In addition to the work to be conducted directly for the benefit of the industry, there are a number of departments in which the food industry is more or less interested. Slightly more than \$6,000,000 is asked for the Bureau of Animal Industry of the Department of Agriculture. Among the activities for which funds are required are the following, together with the amounts asked: \$534,640 for inspection and quarantine work; \$1,977,600 for investigating the disease of tuberculosis of animals and its prevention; \$660,000 for the eradication of the Southern cattle tick; \$375,000 for investigations and experiments in dairy industry and inspection of renovated butter factories; \$118,900 for scientific investigations in diseases of animals; \$510,000 for investigation of hog cholera and its control and prevention; \$50,000 for investigation, treatment and eradication of dourine; \$891,180 for carrying out the meat inspection act of 1906.

#### Enforcement of Stockyards Control Act

The Secretary of Agriculture asks for \$410,500 for enforcing the provisions of the packers and stockyards act approved August 15, 1921. An additional appropriation of \$200,000 was made in August to carry the work through

the current fiscal year. The administration of this act is now in process of being organized. There will be over 70 stockyards, approximately 3,000 market agencies and commission men, and several hundred packers subject to the law. These different classes of people are located in all parts of the United States, and the supervisory and investigational work necessarily will be very extensive.

Thirty-eight million dollars will be required by the Bureau of Internal Revenue for collecting the revenues, as compared with a current appropriation of \$29,600,000, while \$11,550,000 will be required by the Customs division for collecting the customs, as compared with this year's appropriation of \$11,300,000.

A total of \$375,000 is asked for the operation of the United States Tariff Commission, which this year has \$300,000 for that purpose. The Federal Trade Commission estimates that no change will be necessary in the fund for its maintenance, and again asks \$955,000. The Interstate Commerce Commission, in order to continue its various investigations, estimates that \$5,194,970 will be needed next year; it now has an appropriation of \$4,893,100.

## Indiana Attorney General Upholds Old Interpretation of "Original Package" Provision

### Declares in Recent Ruling that Previous Decisions on Federal Food and Drugs Act Hold in Case of Curtice Brothers Company

THAT the food control officials of Indiana may not bar the use of benzoate of soda in manufactured food products on the technical ground of a changed interpretation of certain phrases in the Federal Food and Drugs Act, is made clear in a recent ruling by Attorney General E. S. Lesh of Indiana in a communication addressed to Dr. H. N. Hurty, secretary of the Board of Health of that state, now published for the first time.

The case arose as a result of certain rulings made by the Board of Health interfering with the sale of foods in retail packages preserved with benzoate of soda and manufactured by Curtice Brothers Company. Although previous decisions, both Federal and state, had upheld the right to use this ingredient, food control officials contended that too liberal an interpretation had hitherto been given to the words "original unbroken package" in the Federal act and that they really meant the wooden shipping case or wholesale package and not the consumer's or retail package, as held in previous decisions.

In a careful review of the case, Attorney General Lesh arrays a group of Federal and state decisions and rulings indicating the technical flaws of the Board of Health's action. The new interpretation placed on the terms "unbroken package" and "original package" is shown to be based on false premises.

The ruling follows in full:

Dr. H. N. Hurty,  
Secretary State Board of Health,  
Indianapolis, Indiana.

Dear Sir:

I am in receipt of your letter of October 12th, relative to certain rulings of your board concerning the use of benzoate of soda as a preservative for food products, and relative to the right or power of the Food and Drug Commission to interfere with the sale of foods in retail packages so preserved.

The data submitted with your letter shows the following historical facts which must be considered in reaching an understanding of the questions involved.

In 1908 the State Board of Health ruled that it would not permit the sale in Indiana of foods preserved with ben-

zoate of soda. In that year certain manufacturers of food products using such preservatives filed a suit in the Federal Court to restrain the enforcement of said ruling of the board, and said plaintiff after unsuccessful action in both the District Court and Court of Appeals, finally took the case to the Supreme Court of the United States where it was pending in the year 1915.

While said cause was pending, the parties thereto being Curtice Brothers Company, appellants, and Harry E. Barnard et al, appellees, entered into the following written stipulation to dismiss said appeal:

"Whereas, the statute of the State of Indiana known as Chapter 104 of the Acts of 1907 forbids the sale of adulterated or misbranded drugs and foods within the meaning of the act;

"And whereas, subsequent to the passage of the said act, and under date of November 10, 1908, the appellees herein notified the appellants, and the purchasers of their said products in the state of Indiana, that the use of benzoate of soda was illegal in said state, and that if they wished to find a market in said state they must not use the same;

"And whereas, on the 22nd day of December, 1908, a bill in equity, being the bill in equity involved in this case, was filed in the District Court of the United States for the District of Indiana, in which an injunction was prayed to restrain the defendants, their successors in office, their agents and servants, from enforcing their determination to prosecute these selling appellants' goods as aforesaid;

"And whereas, sundry proceedings were had resulting in the entry of a decree in the said District Court of the United States for the District of Indiana on June 21, 1912, dismissing said bill in equity;

"And whereas, from said decree an appeal was taken to the Circuit Court of Appeals, for the Seventh Circuit, which Court, on October 7, 1913, affirmed the decree of said District Court of the United States for the District of Indiana;

"And whereas, an appeal was taken on August 10, 1914, to the Supreme Court of the United States from said decree of the Circuit Court of Appeals for the Seventh Circuit, which appeal is now pending in said Supreme Court, entitled 'The Curtice Brothers Company, Appellant, v. Harry



E. Barnard, et al.,' and numbered 243 on the docket thereof for the October term, 1915;

"And whereas, since the institution of said proceedings in the District Court of the United States for the District of Indiana, the government of the United States, acting by its proper officers, hereinafter named, and under authority of the Act of Congress, approved June 30, 1906, known as the 'Food and Drugs Act' promulgated a rule authorizing food products containing benzoate of soda to pass into commerce between the State, which rule is in the following language:

"It having been determined that benzoate of soda mixed with food is not deleterious or poisonous and is not injurious to health, no objection will be raised under the Food and Drugs Act to the use in food of benzoate of soda, provided that each container or package of such food is plainly labeled to show the presence and amount of benzoate of soda.

“(Signed) GEORGE B. CORTELYOU,  
Secretary of the Treasury.  
JAMES WILSON,  
Secretary of Agriculture.  
OSCAR S. STRAUS,  
Secretary of Commerce and Labor.’

"And whereas, the paramount and controlling authority of the Federal Government over foods in original unbroken packages entering into interstate commerce is now recognized and admitted, in accordance with which recognition and admission the Board of Health of the State of Indiana, successors in office to the said appellees, under date of April 9, 1915, did promulgate the following regulation: Whereas, the decisions of the Supreme Court of the United States in cases concerning the sale of food transported in interstate commerce and sold in original packages, reserve to officials charged with the enforcement of the Federal Food and Drugs Act the authority to regulate the labeling and character of such food, the chemist to the State Board of Health, who is the state food and drug commissioner, is hereby instructed to follow, without exception, the regulations for the enforcement of the Food and Drugs Act, promulgated by the Secretary of Agriculture, the Treasury and Commerce and Labor, in the enforcement of the Pure Food and Drugs law, Chapter 104, Act 1907, in the cases of food sold in interstate commerce in the original unbroken packages;

"And whereas, there now, therefore remains no question at issue before the Supreme Court of the United States for adjudication between the parties to said proceedings, entitled 'The Curtice Brothers Company, Appellant v. Harry E. Barnard, et al.'

"NOW THEREFORE, in consideration of the foregoing, IT IS HEREBY STIPULATED by counsel for the parties thereto, that the appeal herein shall be dismissed without prejudice, and without costs to either party as against the other.

“(Signed) LAWRENCE MAXWELL,  
Counsel for Appellants.  
BERT WINTERS,  
EVAN B. STOTSENBURG,  
Attorney General of the State of Indiana, Counsel  
for Appellees.”

After the dismissal of the appeal and after the promulgation of the regulation of April 9, 1915, as set out in such stipulation, the data shows that the state food and drug commissioner refrained from interfering with the sale in consumers' packages of articles of food preserved with benzoate of soda which was shipped into the state by Curtice Brothers and other manufacturers, and they were allowed to so sell their goods without objection up until January, 1921, when the Indiana Food and Drugs Commissioner announced an intention to prohibit the sale of such goods in consumers' packages on the ground that the words "original unbroken package" meant the wooden shipping cases or wholesale package and not the consumer's package.

"You ask for an opinion upon the following questions:

"1. Based upon the situation, as set out in the attached

statements, has the State Board of Health through its food and drugs commissioner, the legal right or power to interfere with or proceed against the sale of foods, in retail packages, preserved with benzoate of soda, in the quantity recommended by the Federal Government, which have been manufactured by Curtice Brothers Company?

"2. Based upon the situation, as set out in the attached statements, is the State Board of Health estopped, as a matter of equity, from interfering with or proceeding against the sale of foods, in retail packages, which are preserved with benzoate of soda in the quantity recommended by the Federal Government, and which have been manufactured by Curtice Brothers Company?

"3. In view of the rulings of this Board, respecting the use of benzoate of soda as a preservation, including rules 8, 12 and 18, and the last ruling, dated April 9, 1915, which formed a part of the agreement upon which the case of Curtice Brothers Company v. Barnard et al. was dismissed, has the state food and drugs commissioner authority to interfere with or proceed against the sale of foods, in retail packages, which are preserved with benzoate of soda in the quantity recommended by the Federal Government and which have been manufactured by Curtice Brothers Company?"

It is not necessary to review the authorities upon the several legal questions involved in a consideration of these questions.

#### Meaning of "Original Package" Clear

The records show that Attorney General Milburn on June 30, 1915, gave an opinion to Dr. Harry E. Barnard, then state food and drugs commissioner, in which he held that the words "original package," "original unbroken package" or "unbroken package" as used in food and drugs acts, would mean the package itself as it reached the purchaser—that is to say, the can, bottle, package, carton, case, box, barrel or other receptacle and not the larger box in which they are contained.

In view of the above facts and considering the law applicable thereto, I am of the opinion that the Indiana State Board of Health through its food and drugs commissioner has no legal right to interfere with the sale of foods in retail packages preserved with benzoate of soda in the quantities recommended by the Federal government unless it clearly appears that such foods are in fact injurious to health.

It seems clear that the State Board of Health obligated itself by its stipulation entered in the case in the United States Court, to adopt and follow the regulations for the enforcement of the Food and Drugs act promulgations for the enforcement of the Food and Drugs Act promulgated by the Secretary of Agriculture, the Treasury, Commerce and Labor in the enforcement of the Federal pure food and drugs law in cases of food sold in interstate commerce in the original unbroken package. The Federal Food authorities having held, after exhaustive investigation, that benzoate of soda mixed with food is not injurious to health, and the Indiana authorities having recognized such finding, and having agreed to follow and abide by the Federal rules, and this being acted upon by both the state and the manufacturers using such preservative for almost six years, it would seem to be contrary to law and equity to now permit the state to rescind the order on the sole ground that the interpretation placed on the terms "unbroken package" or "original package" has changed from that which was adopted and acted upon by the parties to the stipulation dismissing the case in the Supreme Court of the United States.

In my opinion your questions numbered one and three should be answered in the negative and question numbered two in the affirmative, assuming that it does not clearly appear that the foods in question are in fact injurious to health, all presumptions being indulged in favor of the contrary in view of the facts stated.

Very respectfully,

(Signed) E. S. LESH,  
Attorney General.



# QUESTIONS AND ANSWERS

## On Problems of Nutrition and Diet for Dietitians and Domestic Science Teachers

Conducted by Bertha N. Baldwin

**Editor's Note.**—Readers are invited to send in questions to be answered in this department, which is prepared to act as a clearing house for current information—answering specific questions and problems suggested by our readers.

### Can Vitamines Be Measured?

"Kindly advise me whether vitamins can be measured. Thus in one pound of creamery butter the approximate analysis is fat 85 per cent, moisture 11 per cent, ash 3 per cent, protein 1 per cent. Is the 85 per cent vitamin fat soluble A? Does butter contain water soluble B and C? Does the egg contain all the vitamins? Which has the most—the white or brown egg?"—C. F. C., Pennsylvania.

FOR all those occupied in manufacturing and selling foods it is important to know about the nutritive and dietetic value of their products. Especially is this true in the case of vitamins, since these essential factors can be harmed or totally destroyed in the process of preparation for market. In these days every manufacturer feels the responsibility of keeping all the natural properties of the food when possible.

This question brings up an interesting and vital point about the vitamin content of foods—their measurement. Vitamins can be measured, but not in terms of pounds and ounces or even in the more scientific grams and cubic centimeters of the chemical laboratory. And unfortunately, there is no definite relation between the other elements of food and vitamins. All the other constituents that we know go to make up foods can be separated from the whole in one of the many ways known to chemists, and weighed and measured or estimated in terms of weights and measures. Such are protein, fat, carbohydrate, the various minerals, water and cellulose.

In the case of the vitamins this sort of measuring is not possible as yet, though no scientist can prophesy what the future may bring forth. Vitamins have not yet been isolated sufficiently from the food to enable them to be weighed, although they have been partially concentrated. They are so sensitive to the manipulation necessary for separating them—heat, drying, alkalis, etc.—that no means have been found for estimating them as the other elements are done. They can be measured only by their effects on growth and health. To find out something of the vitamin content of foodstuffs, it is necessary to conduct a feeding experiment.

#### Method of Feeding Experiments

Such an experiment is carried on as follows. A suitable animal is chosen and is fed a "basal diet" which consists of all the necessary elements except the vitamin to be tested for. It is kept on the diet until it shows symptoms of the disease which results from lack of the vitamin. At this point, the food to be tested is introduced into the diet in increasing quantities until a cure is accomplished. Recovery is usually exceedingly prompt if the vitamin is present. Varying doses of the food can be given to get the smallest amount for a curative dose. For example, a guinea pig will be given a diet that contains protein, fat, carbohydrate, minerals and vitamins A and B, but that lacks C. When the animal shows signs of scurvy, foods containing C or thought to contain C—antiscorbutic foods—will be added until it is cured. The smallest amount necessary to cure will be reported as a curative dose.

To find the protective dose, the animal can be put on an adequate diet for a long enough time to counteract previous diets, and then the food containing the known vitamin be replaced by other food and the animal watched for normal

growth and signs of health and disease. The quantity of food necessary to keep it at normal health will be the minimum protective dose. In the case cited above, the guinea pig might have an adequate amount of orange juice at first, which could be replaced by canned tomato juice in the second part of the experiment in order to find out how much tomato juice is necessary for a protective dose.

Different species of animals require different amounts of food to protect and cure, as do animals of the same species but different weights. So the vitamin content of the food is reported for a given species and given weight, as, a pigeon weighing 300-400 grams require 1.5 grams of wheat germ daily to protect and 2.5 grams to cure polyneuritis (a condition similar to beri-beri in man).

#### Suitable Animals Must Be Taken

It was emphasized above that a suitable animal must be taken for the experiment. Since most investigations are carried one for the benefit of human beings, it is necessary to experiment on animals that show the same symptoms of disease as humans when on a faulty diet. The usual experimental animals are white rats, guinea-pigs, pigeons, chickens and monkeys. Certain ones of these are used for one type of experiment, others for different types. For example, monkeys and guinea-pigs are used in experiments for vitamin C, since they contract scurvy and rats do not; pigeons and chickens are used for vitamin B. In addition, an animal that has a fairly short life shows the results of a faulty diet more quickly so that satisfactory studies can be made in a comparatively short time. A rat lives thirty times as fast as a man, so an experiment of one year will show results parallel to fifteen years of human life.

When an animal is found to show the same symptoms as a man when given a faulty diet, the difficulty is not over, because it is also important that he eat a diet of the same foods that humans eat.

To summarize: it is necessary to get an animal that is subject to the disease as humans are, that will eat the diet to bring on the experimental disease, that will eat the right diet to cure it, particularly eating the special foods to be tested.

When all this has been accomplished and the data show that a certain sample of foodstuff contains sufficient vitamins to produce certain effects in curing and protecting, the situation is not cut and dried. It does not follow that the same holds true of all similar foods. There are seasonal variations and variations from methods of manufacture and handling. For example, fresh milk of spring and summer has a greater vitamin content—especially A, B is not influenced much—than in winter because the fresh green pasturage contains more vitamin than the dry fodder. The vitamin content of butter depends largely on the food of the herd, and the manipulation of the milk.

Vitamins are very susceptible to aging and drying, so will vary in themselves. A fresh vegetable is of more value than one several days old. Some products can be dried commercially so that the vitamins are not destroyed, but another factory may not have found that secret. This is



particularly true of the antiscorbutic vitamine in dried milk. Methods of canning may or may not destroy the vitamine according to the temperature, length of time of processing, condition of acidity, presence or absence of air, etc.

A new method for the determination of vitamine B has been developed recently on the basis that B was necessary to the growth of ordinary yeast plants. If this proves true, a twenty-four-hour test for the vitamine content would be possible—the test approximating the analyses of other elements in foods. But authorities differ as to the reliability of this method so it is still necessary to depend on the longer time feeding experiment.

In spite of the seeming difficulty in finding out the vitamine content of foods, it is worth the manufacturer's while to know the situation as regards his product. Physiological chemists can do much to help him develop his product, and some of the best in the country are busy in this phase of experimental research.

#### The Vitamine Content of Butter

That 85 per cent of butter is fat is no indication that it is also vitamine. Some fats contain vitamine, others do not, others do in a slight or varying degree. Often in the process of manufacture the vitamine may be destroyed although the fat originally contained it. The vitamine content of animal fats depends on the food the animal eats.

Butter is exceedingly rich in vitamine A, but seems to lack

the two water soluble factors, as might be expected. The British Medical Research Committee's Report shows:

	Vitamine A	Vitamine B	Vitamine C
Butter	xxx (abundant)	0	0

Eddy—Vitamine Manual (Williams & Wilkins, 1921), in his table shows:

	xxxx	0	0
Butter	xxxx	0	0

#### Eggs and Vitamines

The egg, as may be expected, is rich in vitamins. The yolk is one of the chief sources of A and B. In regard to the content of C, almost no experimental data on the antiscorbutic value is given. Hess (Scurvy, Past and Present, Lippincott) cites the fact that hard boiled eggs were given to guinea pigs and 9 grams (1-3 ounce) daily was insufficient to protect them. An attempt to cure infantile scurvy by adding one raw egg daily to the regular diet was without effect. If fresh raw eggs contain C the amount would seem to be small, and such large quantities would have to be consumed that they would not be practical.

The British Medical Research Committee's Report:

	Vitamine A	Vitamine B	Vitamine C
Eggs fresh	xx (relatively large)	xxx (abundant)	0? (absent)

Eddy:

	xxxx	xx	0
Eggs	xxxx	xx	0

# MACHINERY AND EQUIPMENT

## New Vacuum Apparatus

The idea of closing glasses or containers by the vacuum process is by no means new, but the apparatus put on the market by a German firm of manufacturers possesses some unique features and is claimed to have given very satisfactory results. This apparatus, as described by C. A. Heise, Ressaue Strasse 19, Berlin, obviates the necessity of

sterilizing preserves and closes the glasses hermetically, even at low temperature.

The apparatus is operated as follows: The glass bonnet seen in the accompanying picture is removed and the preserve glass put on the apparatus proper after having been carefully cleansed. The glass is then covered by the rubber ring and the lid clamped down in the usual manner. Then the bonnet is put on again and the air pumped out by means of the vacuum pump till the vacuum-metre reaches the required mark. Thereupon the air is permitted to enter the apparatus by quickly opening the valve shown on the right hand side of the apparatus, the bonnet is taken down and the glass is found to be hermetically closed.

Practically the same process is being followed in opening glasses. For this purpose, a specially designed spring is carefully inserted between rubber ring and lid, with just enough pressure to prevent it from falling down. The glass is then put on the apparatus, covered by the bonnet and the air pumped out as in the first case. As soon as a vacuum has been attained, the fork-shaped spring slides in between rubber ring and lid, thus forcing the latter gently to open. The valve is then operated, the lid is taken off and the lid may be removed with perfect ease. The storing of meat, puddings, cheese, etc., is done in a similar manner.

## Automatic Bottle Cartoning Machine

An automatic bottle cartoning machine on a standard unit basis that is probably destined to be of great interest and value to the extract manufacturer has been invented by W. F. Codrington, for the National Packaging Machinery Company, Jamaica Plain, Boston, Mass. Machines of this type have already been installed by the Bristol-Myers Company, manufacturer of Sal-Hepatica, and the Centaur Company, manufacturer of Castoria.

After some years of intimate experience with the problems surrounding the bottling and cartoning of such difficult commodities as hygroscopic powdered drugs, sticky liquid dyes, etc., Mr. Codrington was impressed with the need of a simple type of cartoning machine; and he has designed this machine on a standardized, interchangeable unit basis, which is in line with the established manufacturing policy of the National Packaging Machinery Company.

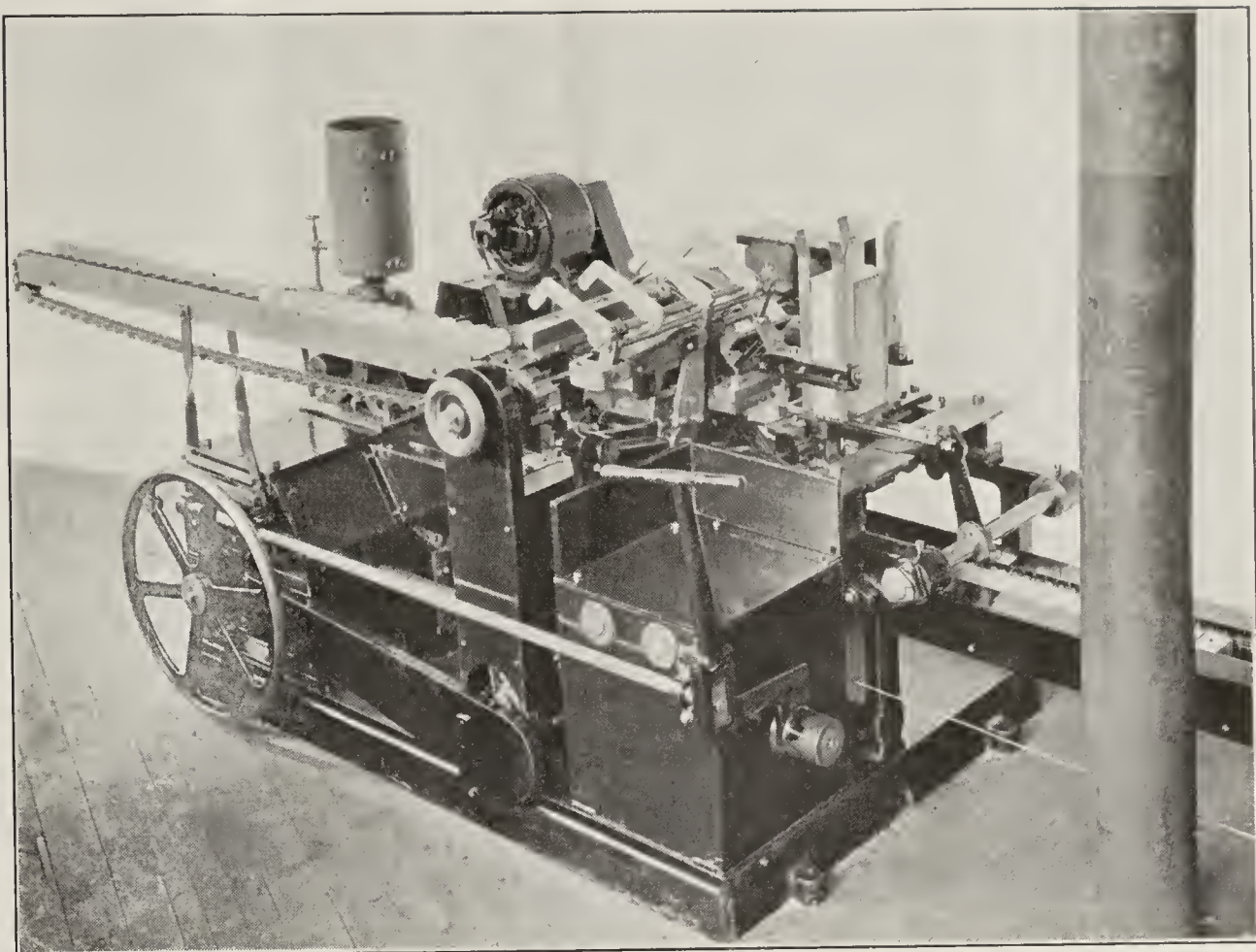


New Vacuum Glass and Container Closer



The simpler form, shown in the accompanying illustration, feeds the flat carton from the bottom of a pile, opens the carton without inserting a blade of any kind, feeds a bottle into the carton from a conveyor, and closes and seals both ends of the carton simultaneously. It is claimed that a new method of handling the bottles has reduced breakage to less than 1-5 of one per cent and that almost any shape bottle of reasonable size can be cartoned at the rate of 60 per minute.

Other attachments, when required, will fold and insert circulars or feed stitched booklets from a pile; others will insert a brush, paddle or cork screw; and still others will fold and insert a corrugated liner or inner shell. The claims for unusual advantages of mechanical construction are beyond the scope of this journal, which refers interest parties to the manufacturers.



Cedrington Automatic Cartoning Machine

## Use of Flour and "Self-Rising Flour" in Baking

**Editor's Note**—In the past few weeks, several queries have been addressed to *The American Food Journal* concerning the merits of self-rising flour in the making of bread, cake, etc. Readers interested in this subject are referred to Miss Helen Louise Johnson's article on page 13 of this issue, wherein the use of this ingredient is gone into very thoroughly. In this connection, likewise, a short article written by Claudia Quigley Murphy, consultant in home economics, New York City, entitled, "The Making of Biscuits, Quick Breads and Cake," bears quoting from. In publishing this quotation, the editors of *The American Food Journal* wish it understood that, while Mrs. Murphy's conclusions agree in the main with Miss Johnson's, the columns of this magazine are always open for fair-minded presentation of both sides of every topic legitimately the subject of further scientific investigation and research. Mrs. Murphy has the following to say:

By **CLAUDIA QUIGLEY MURPHY**

**U**NQUESTIONABLY, baking powder was produced as the result of a demand for a convenient leavening powder that could be used with sweet milk or water and that would produce a nice, fine-grained, sweet-tasting and tender white cake or white biscuit, for the soda-made product required sour milk or buttermilk, and, unless great care was exercised, not only lacked the proper leavening but was too yellow in appearance and brackish in flavor, "that soda taste," as it was described. Baking powder, proportioned carefully by skilled chemists, entirely does away with these disagreeable results. So entered baking powder, in the latter part of the nineteenth century, a product which has added greatly to the palatability of our foods, and because of this has revolutionized our cookery.

### Strong, Steady Powder Necessary

Many words have been written, many speeches made, concerning baking powder and its action; the real thing to be sought is a strong, steady powder, not only quick in action but steadily on the job during the baking process. What makes the wheels go round is as legitimate a question to age and experience as it is to youth. What atom-unit promotes the rise in the batter when baking powder enters is deserving of investigation. Here is a most interesting hypothesis presented after careful examination by an experienced observer.

While eggs do not themselves aerate the dough, yet, ow-

ing to the peculiar airy consistency of their whites, they materially assist in retaining the air introduced in mixing the dough, and as the white of egg coagulates at baking temperature, the little "balloons" of expanded air are retained and the dough is thus lightened. During the past fifty years, baking powder has been developed to produce leavening or aeration by the evolution of a harmless gas in the dough, and useful purposes in reducing the number of eggs required in cake making and giving a finer texture and flavor. But eggs are still essential to lightness, fine texture, and flavor. In some baking powders white of egg in powdered form is included, thus combining the more efficient leavening power of baking powder with the peculiar quality of eggs to retain and more evenly distribute the leavening gas.

An interesting subject surely and certainly of value, but to the average man or woman "the proof of the pudding is in the eating," for the test of the baking powder is finally in the light, flavory, tender, and tasty product. The baking powder that produces good biscuits and waffles, cake or muffins that eat well and are tasty, light, and tender justifies its use in no uncertain manner.

### Skill in Flour

Skill in the choice and handling of flour is a matter not only of information but of experience, for flour even at best is a constantly varying substance, never twice identical,



always subject to the variations of the wheat from which it is made.

Flour being the principal ingredient in making bread, biscuits, cakes, or pies, it is important that it must be selected with care and used with skill as well as eyed with all the available experience. The only safe way, not only for cookery safety but for health preservation, is to avoid mixtures of uncertain origin or unknown ingredients sold under the name of self-rising flour, for in truth there is no such thing. When it is self-rising, it isn't flour; it is a compound of many things under a fanciful name, so the safest way is to avoid it for these reasons:

The proportions of flour and baking powder, or any other leavening agent to be used in cookery, are very different, depending on the consistency of the batter, the way it is to be cooked—whether boiled, baked or done in hot fats; each requires a different amount. Again, the best flour is none too good for family use. It is not possible to control the kind or quality of flour put into ready mixed packages; flour might be of very low grade, quite deficient in vital elements, and yet be flour, so on that score it is not wise to use unknown flour; then, too, the

leavening agent frequently becomes inert through natural causes, such as heat, moisture or humidity, and so it is recharged, dosed again and perhaps again, with the so-called baking powder, which naturally cumulates in the flour and changes a benign product to a questionable element. To repeat, there must be care in the use of baking powder to insure good food, for all receipts cannot be written to one standard of leavening. Dumplings require one quantity, pancakes another, and baking powder biscuits insist on another. So also with cakes. Loaf cakes have one requirement of baking powder, layer cakes another and cookies yet another; so there is no safety in baking unless the baking powder be freshly inserted in the required quantity into the flour, sifted in and sifted again, and the other ingredients added in their due place.

There is a real need for the manufacture and sale of baking powder, because the housewife cannot accurately proportion the ingredients. There is certainly no need for the manufacture of self-rising flour, for she can mix and proportion baking powder with the flour more efficiently for her varied needs than can any manufacturer.

# The Chemist and the Tomato Industry

By B. T. BRANHAM

Chemist, E. Pritchard, Bridgeton, N. J.

THE passage of the Pure Food and Drug Act and the adoption of the standards and methods of analysis recommended by Dr. Howard, for the examination of tomato products caused pulp, soup, ketchup and chili sauce manufacturers to employ men familiar with the Howard method.

As the method was not a routine procedure in chemical or bacteriological laboratories, there were few men available for these positions. To overcome this shortage the National Canners' Association undertook to instruct the men sent them for this purpose by the various packers. Usually the men sent were fresh from high school or college students who wanted a summer job.

## Co-operation With Superintendent Necessary

As the amount of mould, yeast and spores, and bacteria is dependent upon the efficiency of the sorting and trimming of the raw tomatoes, the microscopist was often forced to slow down production or increase the number of workers employed for this purpose. Consequently, friction often occurred with the superintendent.

In fact, the chemist or microscopist, or whatever he is called, had to have tact, a strong character and proficiency in the enumeration of micro-organisms. Naturally, there were few men possessing these qualifications available for summer positions.

The smaller packers of tomato puree cannot afford to employ a capable chemist for the entire year and they are able to dispense with one entirely by the installation of a good factory control system. Both the Government and the canners' association have offered assistance to this end, and by having samples for their product analyzed occasionally by outside chemists, small packers should be able to produce a uniform standard product without excessive cost.

The larger packers of finished tomato products are confronted with the fact that their mechanical equipment is such that no new machine can appreciatively increase their efficiency. They can expect no further help from the machinery manufacturers. They are turning to the chemist.

## Responsibility to Management

In most plants the chemist is directly responsible to the management. He has joint responsibility with the superintendent to produce a uniform high quality product. This is as it should be; the superintendent relies upon his long experience and has a keen eye for color and a highly developed sense of taste. The chemist on the other hand, can accurately measure the consistency and the amount of rot.

The duties of the laboratory chemist can roughly be divided into two general lines. The first deals with the quality of the materials used in the soup, ketchup, paste or chili sauce. He should examine microscopically the pulp used for each making. This is the most important ingredient and the most variable. The other materials can be examined when purchased, but every can of pulp is apt to differ from the other. This is true of the barreled vinegar to a lesser degree and the examination consumes less time.

## Standardization Most Difficult Test

The standardization of the product is the most difficult test. There is no industry where specific gravity plays such an important part and is so badly controlled as in the tomato products industry. A variation of a single degree brix in density makes a difference of over twelve gallons in every hundred gallons of puree. The old experienced cooks make extravagant claims as to the accuracy of their eyes, but density can only be measured accurately by scientific instruments. There are various methods which have their good points, which are in more or less use in plants but they are all far from ideal. A simple hydrometer will yield fair results in experienced hands for a fine sieved ketchup which contains about 20 per cent of sugar. It cannot be successfully used in pulp.

The methods that are based on weight per standard volume are only accurate when air bubbles are removed before weighing. The methods recommended by the National Canners' Association are involved and consume much time, but they are the most satisfactory for pulp. The factory chemist will have to adopt methods suited to the plant and product.

The manufacturer's formulas are usually good, and unless the plant wants to develop new products the chemist should spend all his time in the standardization of the products being manufactured.

The general sanitary condition of the factory and the cleanliness of the containers is a duty of the superintendent. If these are not up to standard the chemist should go and inform the superintendent and not take it up with the men concerned. Where the containers are sterilized before filling the chemist should see that this is done and that the finished product is absolutely sterile.

During these times of business depression the company that produces a uniformly high quality product at a fair price is the company that will pull through. A capable chemist assists greatly to obtain this ideal. He has come to stay in the tomato products industry.



# NEWS OF THE FOOD TRADES

## Room for Improvement in Exports to the Argentine

**Commissioner Brady of Buenos Aires Declares that Greater Part of Our Present Shipments Are Consumed by American and British Residents**

American export foodstuff specialties are not finding the way easy into the Argentine, according to Trade Commissioner George S. Brady, of Buenos Aires. Foodstuffs imported by this South American Republic from the United States are consumed only to a very small extent by the Argentine public, the greater part being absorbed by the American and British residents in that country.

This especially applies to breakfast foods, prepared flours, canned corn and beans, and such products as jelly powders, according to Commissioner Brady. In some cases where the native uses the product it is employed in an entirely different way than in the United States. A brand of American rolled oats enjoys a wide sale, but is always used for soup. Certain breakfast foods are also employed in making soup. The sale of most of these articles is therefore limited to the size of the British and American colonies, which are composed of approximately 45,000 British and from 4,000 to 5,000 Americans. During the past year English foodstuffs have practically replaced the American lines, owing to the higher American prices resulting from the exchange.

### **Imported Canned Goods Chiefly for Foreign Population**

Almost every kind of canned vegetables, meats, fruits, and specialties are imported, but all of these goods follow well-defined routes, says Commissioner Brady. The large Italian population demands Italian canned goods, and the Spanish-born population likewise imports Spanish goods. The largest factor in this trade is without doubt personal taste and not price, although many brands of French, Spanish, and other European canned goods have been coming into the market lately at prices 30 per cent below the domestic article. With the exception of asparagus, the domestic vegetable canning industry is as yet only slightly developed, but is fast gaining in importance.

The principal imports of fresh fruits consist largely of oranges from Paraguay and bananas from Brazil.

### **Large Consumption of Canned Fruits**

The canning of fruits has reached a high state of development in Argentina as far as concerns quantity production. Considering the population of the country, the consumption of canned fruits, especially jams and jellies, is on a large scale, and is only equalled by the consumption of candies, candied fruits, and sweet chocolate. Very little attention, however, has been given to the selection of fruits for canning or to careful cutting, the native goods being sold largely on the matter of price. The preserves enjoying the largest sales are canned peaches and quince jelly. The latter is not like an American jelly, but is a solid, gritty paste. An average retail price for canned peaches is 1.10 paper pesos (about 46 cents) per standard can. There is no factory in Argentina pro-

ducing jams equal to the American average high-grade fruit jams, but the trade does not demand a first-class article if the price is too high. American, English, French and Swiss jams are sold, but chiefly to the foreign colonies in the cities or to a select trade. The entire imports are slight compared with the consumption of the cheaper native jams.

American dried fruits, however, especially peaches, apricots and prunes, have always enjoyed a good sale in Argentina, and were sold on their fine appearance and flavor in spite of prices higher than the native product. However, the native fruit-drying industry in the Andean Province have been greatly developed during the past two seasons, and the market for foreign dried fruits has been steadily declining. Argentina has now become an exporter of raisins and exports to ship large quantities to the United States during the 1922 season.

### **Methods of Sale**

The American manufacturer without a representative in Buenos Aires will usually find that the greater percentage of his sales are through five importers. One American import house in Buenos Aires specializes in American food products, wholesaling them to Argentine dealers.

Undoubtedly the best sales methods for future procedure will be through an organization having a branch in Buenos Aires, as well as in the United States. The opposite seasons of Argentina and the United States gives an opportunity for such a house to build up a trade in an exchange of food products. Argentine fresh fruits can be placed in New York during the winter season, while American fruits can be shipped to Buenos Aires during the southern winter. The foodstuffs market is also so dependent upon the character and size of the native crop that it can only be taken advantage of successfully by a representative stationed in the country.

A list of the principal importers of groceries in Buenos Aires may be obtained upon request from the Commercial Intelligence Division of the Bureau of Foreign and Domestic Commerce.

## **Canned Food Shortage May Advance Prices**

Stating that prices of canned goods may advance 20 per cent in the next few weeks, the Western Cannery Association, at its recent convention at Chicago November 11, advised housewives to stock up immediately.

The statement was based on statistics showing a shortage in the supply of canned foods. It showed there are 8,250,000 cases of canned corn available, instead of the normal supply of 15,000,000 cases; 8,500,000 cases of canned peas instead of 12,250,000, the normal amount, and similar shortages in all canned fruits, vegetables and fish. The canned tomatoes shortage is large.

## **Raisin Growers Change Name**

Trustees of the California Associated Raisin Company at a recent meeting passed a resolution previously approved by the directors, which changes the time-honored name of the greatest co-operative organization in the world to the "California Sun-Maid Raisin Growers."

Announcement of the raisin company's intention to change its name to the California Sun-Maid Raisin Growers was made by President Wylie M. Giffen following the trustees' meeting. No intimation of the change had previously reached the public.

As explained by Giffen, the purpose of the change in the association name is to capitalize the advertising value of the Sun-Maid in the future, and also to bring into the name of the association the word "growers," which carries with it a greater significance than the word "company."

"I'll illustrate it like this," said the raisin company head recently. "you are familiar with the Big Ben clock, but you probably can't tell me the name of the company that makes it. We want the raisin company's name as well known as the name of its trade brand, Sun-Maid."

President Giffen continued that the Sun-Maid brand is famous over the entire country, but the name of the association of growers which makes the Sun-Maid is lost sight of by the public. One of the main purposes of the change of name is to bring the raisin association's name into such close association with the name of its trade pack that each will be equally well known to the great buying public.

There are legal technicalities connected with the change of name that make it impossible at this time to tell when the new name of the association will be formally adopted, it was stated.

## **Fruit Growers Combine**

Plans for bringing into one great central selling organization many of the fruit growing farmers of south Jersey have been completed by representative orchardists, and the combine, to do business under the name of the New Jersey Fruit Growers' Co-operative Association, will begin at once to prepare for handling next summer's crop, with headquarters at Marlton, N. J. The plan adopted is that of a non-stock, non-profit organization, financed by the growers on a pro rata basis of fruit-bearing trees owned by each. It was drawn up by the Bureau of Markets of the State Department of Agriculture, after a careful study of the co-operative plans and their modification to meet New Jersey conditions. Joseph Barton of Marlton is chairman of the committee on organization, and other members are C. B. Lewis, Riverton; John H. Hankinson, Glenmore; Byron Roberts, Moorestown; J. C. Hendrickson, Middletown.

## **Calumet Company Purchases Chemical Plant**

Growth of the Calumet Baking Powder Company is indicated by its purchase of the Superior Chemical Company's large plant at Joliet, Ill. Two of the important ingredients which enter into the making of Calumet baking powder were manufactured in this factory. The purchase price was approximately \$1,000,000. The patented and secret processes of manufacture were included in the sale.



# Protest Against Government Seizures of Hops

## San Francisco Firm Maintains Everyone Has Unqualified Right to Grow and Sell This Farm Product

Declaring that hops are a legitimate farm product that everyone has the unqualified right to grow and sell, so long as it is for a legal purpose, E. Clemens Horst Company of San Francisco sent a letter recently to Federal Prohibition Commissioner Haynes at Washington, D. C., protesting against recent activities of enforcement officials in raiding stores and seizing stocks of hops offered for sale in several sections of the country.

While only one or two seizures were actually made, this firm contends, the wide publicity given the subject by the press has had the effect of creating an impression with many grocery stores throughout the country that it is illegal to sell hops. They state that reports received during the past few days clearly indicate that the majority of grocers by reason of not having followed the subject closely are still of the opinion "that it is illegal even to offer for sale the stocks of hops they now have on hand, for which they paid good money."

The communication to Commissioner Haynes follows in part:

San Francisco, November 1, 1921.

In reply refer to H-53200

Prohibition Commissioner Haynes,  
Washington, D. C.  
Federal Prohibition Director,  
Oklahoma City, Okla.  
U. S. District Attorney  
Oklahoma City, Okla.  
Gentlemen:

We respectfully protest your seizure on September 23, 1921, and your refusal since then to release, of 342 cases of hops belonging to us in Tulsa, Okla.

This protest is directed to each and all of you, as you all have been repeatedly notified by us on the illegality of your seizure, and nothing has been done by either of you, toward releasing our property.

Our protest is based upon the following uncontrovertible facts:

You have seized our hops upon a claim by you, that some one with whom we have neither direct nor indirect connection and whom we never heard of, intended to sell for an alleged illegal purpose, a package of hops that were grown by us. The hops seized were not of the same lot as those offered for illegal sale, and neither the hops seized nor the package of hops said to have been offered for illegal sale, were ever sold or offered for sale by us or by anyone in any way connected with us except in the ordinary open, usual channels of legitimate trade.

### Legitimate Farm Product

Hops are a legitimate farm product that everyone has the unqualified right to grow and sell, so long as he does not sell them for any illegal purpose.

Hops are used for a great variety of household and medicinal purposes, such as bread making, poultices, hop tea, hop sleeping pillows, appetizers, tonics, and for absolutely harmless and non-alcoholic narcotics.

So general has been the household use of hops, that for the past 150 years, they have been and still are, and ever will continue to be, on legitimate sale in every grocery store and drug store in the civilized world.

Among our regular customers for hops is the United States Government, in that we regularly supply the United States Navy

with hops in small packages, in quantities of about a carload at a time.

The United States Department of Agriculture, Washington, D. C., has, for the past 25 years, kept on its staff and still has on its staff, a hop expert, who keeps American farmers advised as to the best methods of growing, curing and marketing hops.

Hops contain no alcohol nor any constituent from which alcohol can be made.

### Not Important Factor in Illegal Product

We also protest against your discrimination against material that is not an important factor in any illegal product, and in favor of other material that constitutes over 95 per cent of the entire illegal product, and in favor of other material that contains or produces 100 per cent of all the alcohol in any illegal beverage.

Water constitutes over 95 per cent of all the Home Brew that is made. If it is your duty to confiscate hops, it is likewise your duty to confiscate water.

Home brew cannot be made without fuel in some form or other; this is usually supplied direct from the retail fuel dealers, or the gas or electric companies in your community, therefore it would be your duty to confiscate all the fuel, gas and electricity in your community.

Home brew cannot be made or kept without cooking and storing utensils, therefore it would be your duty to confiscate all the metal, porcelain and glass, and the products of metal, porcelain and glass in your community.

Home brew cannot be made without yeast, which is sold in every grocery store and bakery in the country, therefore, it

would be your duty to confiscate all the yeast in your community.

### Involves Vital Principle

Your confiscation of our hops involves a vital principle, because if you are right in your seizure of our hops, nobody in the United States can eat any agricultural product, drink any water or any other liquid, or ride in any automobile. No one may have any fuel, or even air to breathe (as air is used in home brew) without first getting permission from the Federal Prohibition Commissioner.

You have first seized our goods and held them, while you admit you have no evidence on which to hold them, but that you are making investigations, in your hopeless efforts to justify your seizure. It used to be the law, that punishment followed a crime. Your theory is obviously to punish and keep on punishing your victims while you are trying to find a crime that has not been committed, at least not by your victim or anyone else with whom he is even remotely connected.

We now respectfully demand that you release our hops from your unwarranted seizure, and that you do so without further parleying.

We particularly wish you to understand that we ask no favor from you, and that we resent your inference that we have ever acted in any way contrary to law.

This is an open letter, which, with whatever reply you may be pleased to make, we propose to use as we see fit in the interest of American producers, middlemen, and consumers of all products which might be used illegally, or, in other words, of practically all the resources of the country, so that the public may take steps to protect itself from recurrences of such conduct as inflicted by you upon us and many others.

Faithfully,

E. CLEMENS HORST CO.

## Canners Want Confidence of Consumer

### C. H. Bentley of California Packing Corporation Tells of Extensive Investigations of California and Stanford Universities

That the canners of the country are leaving no stone unturned and have spared no expense in their efforts to gain the confidence of the consumer of canned foods was the keynote of a discussion of the subject by C. H. Bentley of San Francisco, vice-president of the California Packing Corporation, who for many years has taken a leading part in the canning industry in trying to extend the foreign as well as the domestic markets for canned foods.

Mr. Bentley was recently in Washington for consultation with the Bureau of Foreign and Domestic Commerce in regard to this subject. In discussing the work which is being done in California, Mr. Bentley said:

### How Universities are Co-operating

"California and Stanford Universities both are carrying on extensive and thorough investigations for the sole purpose of solving the problems involved. The United States Public Health Service, the Bureau of Chemistry and the State Board of Health are collaborating in this work, the direct cost of which is being borne by the canners of California and the National Canners' Association. Harvard University in the East is carrying on work of the same character and supported in the same way. I do not believe any industry has ever done more along the lines of scientific research, af-

fecting as it does not only canned foods but foods in general.

"One of the first practical results of the work in California was to furnish the State Board of Health with scientific facts which formed the basis for certain regulations which have resulted in placing the olive industry out there on a safe and secure basis. Prompter handling of the fresh olives, greater care in the selecting and packing of the fruit, and an increased temperature of sterilization are the objects accomplished by these regulations, in the enforcement of which they had the full co-operation of state and federal officials as well as of the industry. Olives packed during the past year have been distributed to the entire satisfaction of the consumers, and are recognized by food authorities as being in every way desirable.

"Working closely in touch with the above investigations is Dr. W. D. Bigelow, chief chemist of the research laboratories of the National Canners' Association. He is now carrying to completion a most important and fundamental research, the results of which will put into the hands of every canner desiring it the necessary information regarding the sterilization of canned foods, and will remove that important step from rule-of-thumb practice to an absolutely scientific basis."



## Jam Outlook Good for U. S. Exporters

### Opportunity to Take Advantage of European Crop Shortage and Inferiority of Manufactured Products

American manufacturers of jams and jellies will experience no difficulty in marketing their product in England and France, according to R. U. Delapenha, who recently returned from Europe where he had been making a first hand study of the trade situation. Mr. Delapenha believes that as a result of the fruit and vegetable shortage and the inferiority of jam products now being manufactured in Europe, a very favorable situation has been created for the importation of American goods.

"The fruit and vegetable crops in both England and France," declared Mr. Delapenha in a recent letter, "were almost completely lost from an unusual spell of dry weather, the like of which has never before been experienced by the oldest inhabitants. England, usually a beautiful country to travel through, is burned up. Whole fields are scorched and her crops have been seriously reduced. A large part of France is in exactly the same condition, which has resulted in abnormally high prices for fruit and vegetables of all descriptions.

#### Putting Out Inferior Products

"I have made a very careful survey of the jam situation in England and found that nearly every one of the large manufacturers have been putting out a product which was greatly inferior to the excellent quality that was freely distributed prior to the war. Indeed in some cases, the quality of some of the jams that I tested was of a character quite different from anything that could be seen on our market. This jam is made principally of fruit pulp brought from Holland and from Spain. When you compare the price at which they are selling the different varieties of jams with the quality, they are getting a higher price in proportion to their products than we are. I took with me to England and France samples of our preserves and cut them in comparison with several well known brands, and the manufacturers were somewhat surprised to discover that we were making some very fine goods on our side.

"It would appear from the above that with a very short supply of fruit in both these countries and with the knowledge that we can get no serious competition from those quarters, with a somewhat better improved industrial situation in our own country, all manufacturers should be able to distribute their remaining stocks at a price that should permit them to recover some of the losses made earlier in the year.

"The industrial conditions in both countries that I have visited are very unsettled, and there does not seem to be any hope for an early resumption of business owing to the complete lack of buying power of other nations brought about by the wide fluctuations and decline in exchange."

#### Wholesale Grocers Merge

Merger of three wholesale grocery houses in Chicago—Durand & Kasper Company, Henry Horner & Company and McNeil & Higgins Company—was announced recently. The consolidated concerns will occupy the building erected a few years ago by the McNeil & Higgins Company, 301 East Grand Avenue, and operate as the Wholesale Grocers' Corporation.

## Coming Conventions and Important Events

December 14—Hotel Association of New York City, quarterly meeting.

December 15—Iowa Hotel Association, Convention, Cedar Rapids.

December 15-16—Tri-State Packers' Association, Hotel Adelphia, Philadelphia.

December 15-16—Michigan Cannery Association, Grand Rapids.

December 15-16—Kansas Association of Ice Cream Manufacturers, Kansas City, Mo.

January 11, 1922—United States Civil Service Examinations, Food and Drug Inspector, at local Civil Service Boards.

January 12-14—American National Live Stock Association, Twenty-fifth Annual Convention, Colorado Springs, Colo.

January 16-17—National Cannery Association Convention, Louisville, Ky.

January 16-17—National Preservers and Fruit Products Association, Convention, Louisville, Ky.

January 17-23—National Thrift Week.

## Recent Patents

The following patents of interest to readers of this journal recently were issued from the United States Patent Office. Copies thereof may be obtained from R. E. Burham, patent and trade-mark attorney, Continental Trust Building, Washington, D. C., at the rate of 20 cents each. Number of patent and name of inventor should be stated in ordering.

1,393,873. Method of preserving olives. Henry N. Wolff, Oroville, Cal., assignor to Sunical Packing Company, San Francisco, Cal.

1,393,915. Process of forming blocks of cheese. Nicholas Simon, Appleton, Wis.

1,393,997. Process of preparing cereal food. Jacob Friedman, New York, N. Y.

1,394,035. Granular food product. John C. MacLachlan, St. Paul, Minn., assignor to Standard Food Products Company, same place.

1,394,138. Process of peeling fruits and vegetables. William D. Bost and Harry M. Miller, Los Angeles, Cal.; said Bost assignor to said Miller.

1,394,349. Covering for meats. Lyle J. Fletcher, Berwyn, Ill., assignor to Figaro Chemical Company, Dallas, Tex.

1,394,736. Process for rendering fats and oils. Charles F. Kamrath, Omaha, Neb.

1,395,014. Apparatus for processing grain under high pressure and high temperature. Charles V. Rowell, Croydon, New South Wales, Australia.

## Food and Drug Inspector Examinations

The United States Civil Service Commission announces an open competitive examination for food and drug inspector on January 11, 1922, at any of the local boards at which examination is requested in applications received in time to mail examination questions. Vacancies in the Bureau of Chemistry, Department of Agriculture, for duty in Washington, D. C., or elsewhere, at \$1,600 a year, and in positions requiring similar qualifications, at this or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

## First American Corn in Caucasus

### Soviet Government Desirous of Purchasing American Meal Grits—High Praise of American Farmers

That the local Soviet governments of Armenia and various departments of these governments are desirous of purchasing American corn meal and paying for it in advance in Russian gold, was clearly indicated in a recent letter from Acting Director General E. A. Eckman of the Near East Relief, Caucasus Branch. This communication was made public by the American Corn Millers' Federation, through whose efforts the first shipment of American corn into the Russian Caucasus was due.

Writing under date of August 31 to the New York headquarters of the Near East Relief in New York City, Director General Eckman states that the Steamer Datchet, carrying 4,400 tons of corn products and used clothes, arrived at the port of Batoum in time to bring relief to thousands of undernourished orphans and refugees facing death from starvation.

"The corn products landed," says Director General Eckman, "were unusually clean for cargo of the nature arriving at the Batoum port. Sacks were new, intact, and the contents as clean as when first leaving the mills. In fact, the entire shipment was so remarkably clean, well-milled and packed that it caused much favorable comment all along the route, from first sight on the dock to its final destination to the interior of Armenia.

"This was the first known introduction of corn products into the Caucasus, and already several inquiries have been received from local Soviet governments and various departments of these governments, notably the railroad lines, as to the possibility of arranging for the direct purchase in the United States of large quantities of corn meal and flour for use in their government institutions. The railroads are so eager for these products that they have offered to make an advance payment in Russian gold for a continuous monthly supply.

"The corn grits and flour have been issued to all districts and from the reports now arriving, they bid fair to outrival wheat flour in popularity for food. With a mixture of 35 per cent corn products with wheat, an excellent and most palatable bread is produced. The hominy grits came in at a most opportune time. We have met with great difficulty in securing sufficient vegetables as a variation of diet and, of course, as a most necessary element of food for feeding the numerous undernourished orphans under our care and for the thousands of refugees facing starvation in the Caucasus. The hominy grits, an entire new food in this country, makes an excellent cooked vegetable. It is also eaten in the form of porridge or mixed with soup or meat. The medical staff and dietitians declare it a Godsend because of its strength in vitamins."

All inquiries concerning activities of the American Corn Millers' Federation should be addressed to T. M. Chivington, Secretary, 727 Postal Telegraph Building, Chicago, Ill.



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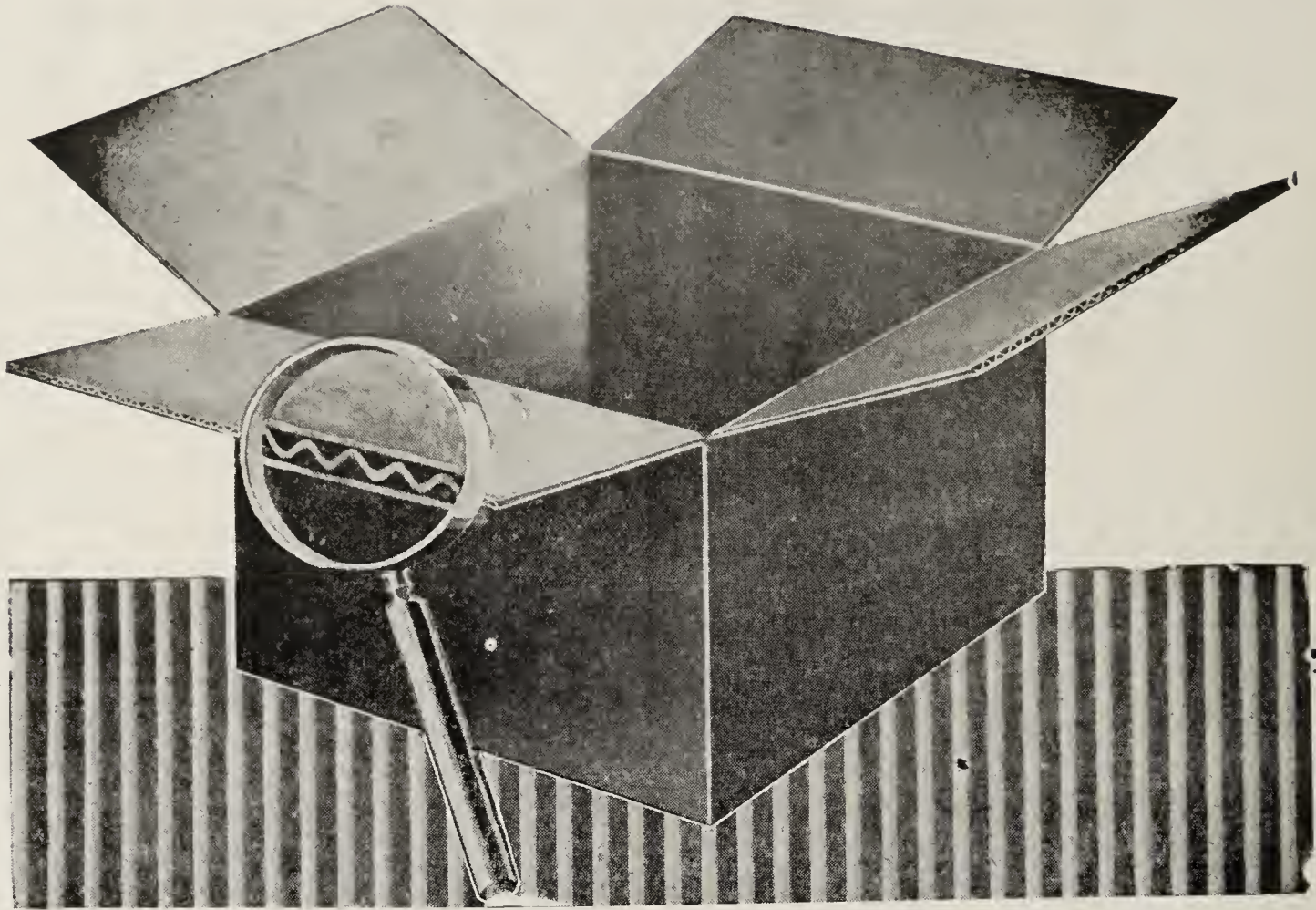
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